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INTERIM REPORT CLOSURE OF BURN-ZOL INCINERATOR

PREPARED FOR:

**UNITED TECHNOLOGIES CORPORATION
PRATT & WHITNEY
400 MAIN STREET
EAST HARTFORD, CT 06108
EPA ID NO. CTD 990672081**

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360 MAIN STREET
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SCI-TECH PROJECT NUMBER 90021

JUNE 1990



400 Main Street
East Hartford, Connecticut 06108

JUN 13 1990

June 13, 1990

Pratt & Whitney
CTD990672081
R-113
OTHER: _____

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Re: Interim Report - Closure of the Burn-Zol Incinerator
UTC - Pratt & Whitney East Hartford, CT
EPA ID #CTD990672081

Dear Sirs:

United Technologies - Pratt & Whitney (P&W) is pleased to submit an interim report for closure of the Burn-Zol Hazardous Waste Incinerator. This preliminary report has been prepared to support our request for extension to the closure time period as stated in our March 7, 1990 letter correspondence.

The report summarizes the major elements of the approved closure plan, the closure activities executed in accordance with the plan, any deviations from the plan and areas where additional closure tasks are necessary. We are confident that the remaining tasks can be executed within the time period requested in the above referenced letter.

Your time in review of the enclosed report is greatly appreciated. Should you have any questions or comments please contact Mr. Scott Singer at (203) 565-3514.

Sincerely,

R. C. Weiss
Director, Facilities & Services

RCW/SLS/ljs
s-s5x

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1.0 INTRODUCTION

United Technologies-Pratt & Whitney (P&W) owns and operates the Concentrated Waste Treatment Plant (CWTP), a hazardous waste treatment and storage facility, located at the P&W East Hartford plant. A Burn-Zol hazardous waste incinerator, which was part of the CWTP, is being closed per the closure plan, approved on September 11, 1989 by both the Connecticut Department of Environmental Protection (DEP) and the United States Environmental Protection Agency (EPA), Region I. International Technology Corporation (IT) of Monroeville, PA., was contracted to carry out the closure activities. Sampling, as required by the approved closure plan, was performed by either IT or P&W personnel. All samples collected during closure were analyzed at Connecticut certified Averill Environmental Laboratory, Inc., (Averill) of Plainville, CT. The analytical data were reviewed and validated by Fred C. Hart Associates, Inc., (Hart) of Albany, NY.

The analytical data for samples collected at the end of initial closure activities indicate that two of the waste feed line rinsates have not fully met the closure criteria. Because of this, P&W has requested an extension of the closure period from both DEP and EPA, Region I to allow for additional closure activities. This report describes the closure activities performed to date. This report also contains the specific submittals, which constitute a closure certification. These are discussed in sub-Section 5.4.

2.0 PROJECT DESCRIPTION

Closure of the incinerator is considered to be a partial closure of the overall P&W East Hartford hazardous waste facility. This section identifies the equipment and the ancillary facilities subject to closure and summarizes the closure plan.

2.1 System Description

The approved closure plan authorizes P&W to close the following equipment and facilities in the CWTP.

1. Combustion Chamber
2. Exhaust Stacks (2)
3. Waste Heat Boiler
4. Air Pollution Control Equipment
5. Interconnecting breaching and piping
6. Cyanide feed line
7. Blended oil feed lines(2)
8. Concrete Pad for combustion chamber
9. Concrete Pit of air pollution control equipment
10. Ceiling above the equipment to be closed

The combustion chamber and the exhaust stacks were located outdoors. The remainder of the incinerator train was located indoors. The cyanide and the blended oil waste feed lines are located underground. A site plan, equipment layouts and a flow diagram of the incinerator train and the waste feeds lines are included in Appendix A. Photographs of the incinerator train are included in Appendix B.

2.2 Closure Plan Summary

The final closure plan dated July 28, 1989 as amended on August 17, 1989 was approved on September 11, 1989. The following are the main features of the approved closure plan.

2.2.1 Disposal and Decontamination

- a. Any ash from the incinerator, residue from the waste heat boiler, and packing from the scrubber will be removed, containerized, and treated as hazardous waste.
- b. Waste feed lines will be decontaminated by flushing until they meet the closure criteria and then they will be abandoned in place. Any rinsate generated from flushing of the lines will be treated as hazardous waste.
- c. The entire incinerator train including the air pollution control equipment will be dismantled, cut to shippable sizes and disposed of at a RCRA permitted secure landfill.
- d. The concrete slab will be shotblasted or scarified. Any concrete residue will be treated as hazardous waste.
- e. The concrete pit for the air pollution control equipment will be hydroblasted. Any rinsate generated will be treated as hazardous waste.
- f. The ceiling in the building will be washed by applying a biodegradable cleaning solution with a hand applicator. Any rinsate generated will be treated as hazardous waste.
- g. All hand tools that may have come in contact with the incinerator train will be decontaminated by washing. Any rinsate generated will be treated as hazardous waste.

2.2.2 Sampling

- a. The final flush from each waste feed line will be sampled.
- b. Chip samples will be taken from the concrete slab and the concrete pit.
- c. Wipe samples will be collected from the ceiling.

2.2.3 Analysis

- a. All samples will be analyzed for presence of the constituents identified in Table 2 of the final closure plan (Appendix C).
- b. Concrete chip samples will be analyzed for EP toxicity.

2.2.4 Closure Criteria

- a. Appendix C constituent levels in the rinsate must be either below the levels shown in Table 1 of Appendix D or equal to or below the levels in the influent water sample collected prior to flushing.
- b. The concrete chip samples must show Appendix C constituent levels either equal to, or below the background levels, or below the levels shown in Table 2 of Appendix D and below the EP Toxicity levels shown in Table 1 of 40 CFR 261.24 in effect on the date of closure approval (September 11, 1989).
- c. Appendix C constituent levels in the ceiling wipe samples must be equal to or below the background levels.

3.0 CLOSURE ACTIVITIES

The activities associated with the closure of the Burn-Zol hazardous waste incinerator consist of dismantling, decontamination, disposal and sampling. The logs of daily activities of the IT crew are included in Appendix E. Photographs showing progress of the closure activities are included in Appendix F.

During the closure activities the health and safety plan included in Appendix G was followed. A safety meeting was conducted prior to start of work each day. The lists of attendees and topics covered are included in Appendix H.

3.1 Dismantling

All major components of the incinerator train and interconnecting breaching and piping were dismantled. Refractory from all refractory lined items was removed by hand or with an electric chipping hammer. The shells of all components and the interconnecting breaching and piping were cut into shippable pieces. The concrete pad with footing was excavated and broken up. Debris from dismantling and small equipment pieces were initially staged on plastic sheeting with plastic covers and then placed in covered roll-off containers for disposal. The large equipment pieces were similarly staged and then put on flat bed trailer for disposal. The following is a list of the components dismantled:

1. Combustion Chamber
2. Exhaust Stacks
3. Waste Heat Boiler
4. Air Pollution Control Equipment
5. Interconnecting Breaching and Piping
6. Concrete Pad for Combustion Chamber

3.2 Decontamination

The items decontaminated and the decontamination procedures are noted below.

1. Blended Oil Feed Line (WFL1):

The line was flushed in sequence tap water, Citrikleen solution (30%) (a biodegradable detergent) and tap water. As the line was not clean, it was then flushed with steam for 7.5 hours followed by Citrikleen solution, and tap water in sequence. The line was capped at both ends.

2. Blended Oil Feed Line (WFL2):

The line was found plugged. It was flushed with steam for 6 hours. It was then flushed in sequence with tap water, Citrikleen solution and tap water similar to WFL1. It was then flushed again with steam for six hours and Citrikleen solution and tap water in sequence. The line was capped at both ends.

3. Cyanide Feed Line (WFL3):

The cyanide line decontamination was similar to WFL1, except a 25% sodium hydroxide solution was used instead of Citrikleen solution during the initial cleaning. The line was capped at both ends.

4. Concrete Pit:

The concrete pit was decontaminated by steam cleaning.

5. Ceiling:

The ceiling was hand sprayed with Citrikleen solution and wiped with disposable lint-free cloth.

6. Tools:

The tools used in closure were steam cleaned.

Rinsates from all decontamination operation were collected in 55 gallon drums.

3.3 Disposal

The types of waste materials and disposal methods from this closure are noted below. For disposal purposes, the waste materials were treated as hazardous waste.

1. Debris and Small Equipment Pieces:

These were put in four roll-off containers which were transported off-site by licensed hazardous waste transporters to the RCRA permitted secure landfill operated by Chemical Waste Management, Inc., at Emelle, Alabama under the following hazardous waste manifest numbers:

CWMA	476051
CWMA	476052
CWMA	476055
CWMA	476056

The first two containers were shipped on December 1, 1989 and the last two on December 8, 1989. Copies of manifests, receipts and disposal certificates are included in Appendices I, J, and K, respectively.

2. Large Equipment Pieces:

These were put on a flat bed trailer and shipped to the same disposal facility as above by a licensed hazardous waste transporter under hazardous waste manifest number CWMA 476053 on December 4, 1989. Copies of manifest, receipt and disposal certificate are included in Appendices I, J, and K, respectively.

3. Rinsates:

The collected rinsates were transferred from 55 gallon drums to bulk tanks containing similar and compatible liquid hazardous waste streams. These bulk waste streams are routinely sent off site for disposal and/or treatment at properly licensed disposal and/or treatment facilities.

3.4 Sampling

The following samples were collected per the approved closure plan.

1. Final rinsate from WFL1
2. Final rinsate from WFL2
3. Final rinsate from WFL3
4. Influent tap water
5. Concrete chip samples from the pit
6. Wipe samples from the decontaminated ceiling
7. Wipe samples from background ceiling area

The sampling methodology and the analytical results are discussed in more detail in Section 4.

4.0 SAMPLING AND ANALYSIS

During and at the end of closure activities various samples were collected to assess the completeness of these activities. The samples were collected by either Mr. Jacques Hill of IT or Mr. Scott Singer of P&W. The collected samples were sent under full chain-of-custody to Averill for analysis. Sampling logs and raw analytical data are included in Appendices L and M respectively. The analytical results were reviewed and validated by Hart. The validation report is included in Appendix N. Only the final sampling program and the validated data from the analyses of the final samples are presented in this section.

4.1 Waste Feed Lines

The second and final round of waste feed line sampling was performed on December 7, 1989. IT coordinated sampling activities and the first sample collected was an influent tap water sample from the wax building. The water was activated at 1150 hours and allowed to flow through a new length of garden hose for 5 minutes prior to sample collection. The sample was collected directly from the end of the garden hose.

Waste feed line flushing operations were initiated at 1155 hours. The flushing procedures were modified by flushing each waste feed line with Citrikleen solution, and tap water in sequence. An average of 25 gallons of rinsate was collected from each line prior to sample collection.

The samples were collected directly into the laboratory bottles from a new length of garden hose on each line. For this round of sample collection, the samples were labelled WFL-1A, WFL-2A, WFL-3A for each respective feed line. In addition, a blind duplicate sample was collected from waste feed line WFL2 and was labelled WFL-4A.

The QA/QC samples included a field blank collected on November 15, 1989 during the initial round of sampling and a trip blank. The field blank was prepared on November 15, 1989 at 1540 hours by pouring deionized water into sample containers. The trip blank was prepared by Averill and accompanied the sample bottles from and to Averill.

Following sample collection, all sample jars were labelled, transferred to an iced cooler and hand delivered under full chain of custody to Averill for analysis.

The validated analytical results are presented in Table 4-1. The results indicate that the levels of Appendix C constituents in rinsate from the cyanide feed line (Sample WFL-3A) were below the target levels. Results from both blended fuel lines (Samples WFL-1A, WFL-2A and WFL-4A) indicate that levels of all inorganic Appendix C constituents were below the target levels.

TABLE 4-1

WASTE FEED LINE SAMPLE ANALYSIS (mg/l)

	Target Clean	SAMPLE NUMBERS				
<u>Parameter</u>	<u>Level</u>	<u>Influent</u>	<u>WFL #1A</u>	<u>WFL #2A</u>	<u>WFL #3A</u>	<u>WFL #4A*</u>
<u>Metals</u>						
Arsenic	0.05	<0.01	<0.01	<0.01	<0.01	<0.01
Barium	1.0	<0.01	0.01	<0.01	0.01	<0.01
Cadmium	0.01	<0.006	<0.006	<0.006	<0.006	<0.006
Chromium	0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Chromium VI	--	<0.01	<0.01	<0.1	<0.01	<0.01
Copper	1.0	0.21	0.21	0.1	0.09	0.09
Lead	0.05	<0.1	<0.1	<0.1	<0.01	<0.01
Mercury	0.002	<0.001	<0.001	<0.001	<0.001	<0.001
Nickel	--	<0.02	<0.02	<0.02	<0.02	<0.02
Selenium	0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Silver	0.05	<0.01	<0.01	<0.01	<0.01	<0.01
<u>Cyanide</u>						
Total	0.2	<0.005	<0.005	0.12	<0.005	0.21
<u>Volatile Organics</u>						
Methylene Chloride	0.025	<0.005	0.058	<0.01	<0.005	<0.01
1,1 Dichloroethene	0.007	<0.005	<0.005	<0.01	<0.005	<0.01
1,1,1 Trichloroethane	0.2	<0.005	0.012	0.022	<0.005	0.016
Carbon Tetrachloride	0.005	<0.005	<0.005	<0.01	<0.005	<0.01
Trichloroethene	0.005	<0.005	0.122	<0.01	<0.005	<0.01
Tetrachloroethylene	0.02	<0.005	0.048	3.4	<0.005	3.7

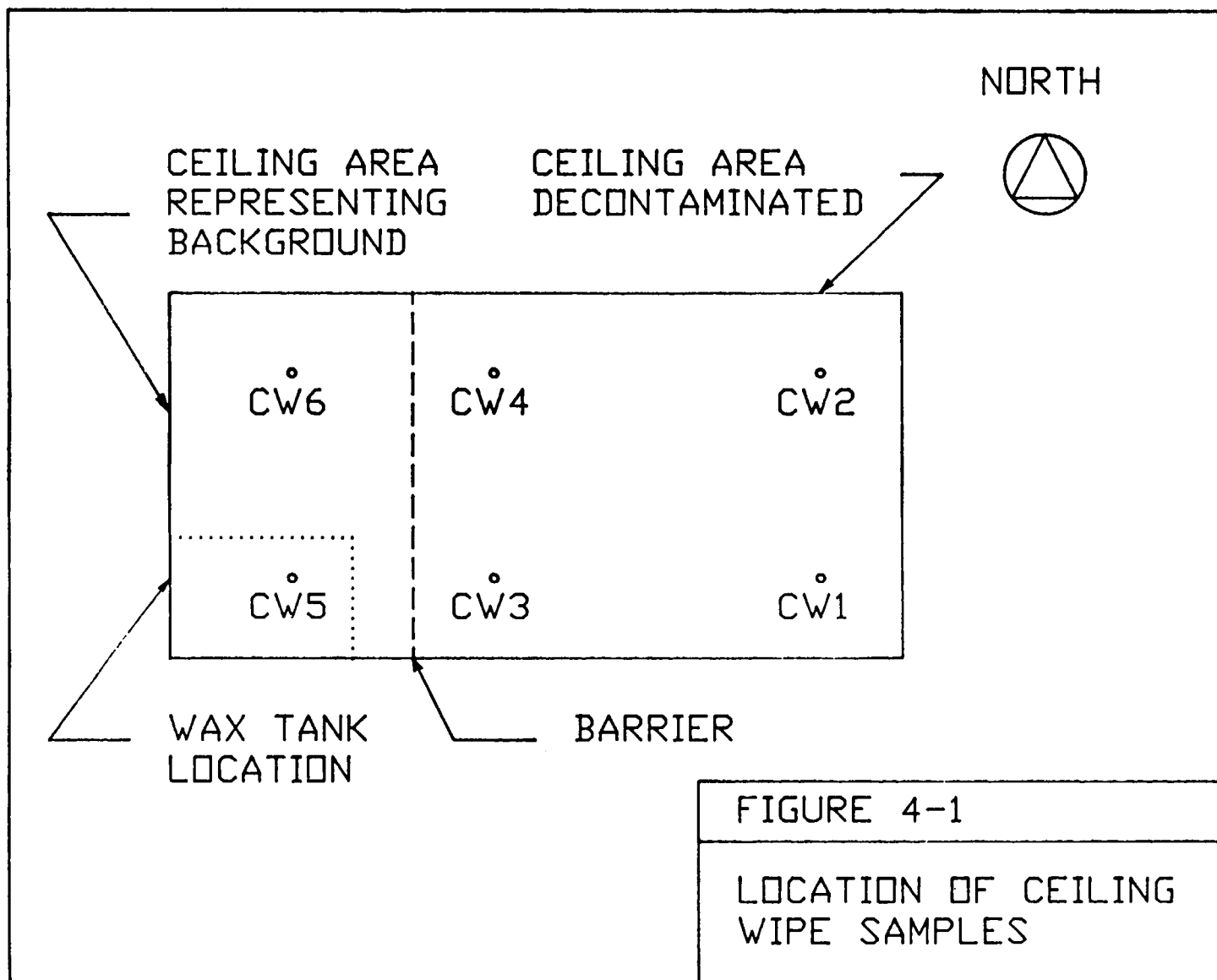
* duplicate of WFL #2A

4.2 Ceiling

A total of six wipe samples were collected on December 7, 1989. Four of the wipe samples (CW-1, CW-2, CW-3, CW-4) were collected from an area of the ceiling which underwent decontamination. The remaining two samples (CW-5, CW-6) were collected from outside the decontamination zone to represent background conditions. Figure 4.1 shows the layout of the sample locations.

Sampling methodology followed the procedures per the approved closure plan. Vinyl acetate templates were used at each location to outline the sample area. The template dimensions measured 5 X 20 cm thereby totalling 100cm². Templates were affixed to the ceiling using small magnets. Sample wipes were transferred directly into the sample jars following sample collection, and the sampling team changed gloves at each sample location to ensure sample integrity.

At a given sample location, a total of three templates were positioned side by side following the contour of the corrugated ceiling. The first template was sampled for Appendix C organic constituents, the second for cyanide and the third for Appendix C metals. Methanol, dilute sodium hydroxide solution, and dilute nitric acid solution were the respective extraction solvents. During VOCs sampling it was observed that the methanol was stripping the paint off the ceiling. No such stripping was observed during cyanide or metals sampling.



Specific sampling procedures for each set of parameters consisted of performing three wipes. The first two wipes were performed wet by moistening the wipe with the appropriate extraction solvent. The third wipe was performed dry to absorb any residual extraction solvent from the sample area.

QA/QC sampling consisted of one field blank collected at location CW-1. This sample was prepared in the same manner as the other samples except no wiping of the ceiling was performed.

Following sample collection, all sample jars were labelled, transferred to an ice cooler and hand delivered under full chain of custody to Averill for analysis.

The validated analytical results are presented in Table 4-2. The results indicate that the Appendix C constituent levels shown by samples CW-1, CW-2, CW-3 and CW-4 match the corresponding constituent levels shown by background samples CW-5 and CW-6. The only exception was the 1,1 dichloroethene level in sample CW-2. As there were not any incinerator train components or waste feed lines near the location where sample CW-2 was collected, this level can not be attributed to the equipment undergoing closure. Also, this reported level is inconsistent with non-detectable levels reported for other locations; therefore, the value is considered an analytical anomaly and was rejected.

TABLE 4-2

CEILING WIPE SAMPLE ANALYSIS (micro g/100cm²)

<u>Parameter</u>	<u>SAMPLE NUMBERS</u>					
	<u>CW-1</u>	<u>CW-2</u>	<u>CW-3</u>	<u>CW-4</u>	<u>CW-5*</u>	<u>CW-6*</u>
<u>Metals</u>						
Arsenic	<47.5	<47.5	<47.5	<47.5	<47.5	<47.5
Barium	>14000	>14000	>14000	>14000	>14000	>14000
Cadmium	<45	<45	<45	<45	<45	<45
Chromium	<25	<25	<25	<25	<25	<25
Chromium VI	--	--	--	--	--	--
Copper	< 2.5	< 2.5	< 2.5	< 2.5	< 2.5	< 2.5
Lead	<130	<130	<130	<130	<130	<130
Mercury	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
Nickel	< 5	< 5	< 5	< 5	< 5	< 5
Selenium	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5
Silver	< 2.5	< 2.5	< 2.5	< 2.5	< 2.5	< 2.5
<u>Cyanide</u>						
Total	< 0.25	< 0.25	< 0.25	< 0.25	< 0.25	< 0.25
<u>Volatile Organics</u>						
Methylene Chloride	<4.9	<4.9	<4.9	<4.9	<4.9	<4.9
1,1 Dichloroethene	<0.05	0.14	<0.05	<0.05	<0.05	<0.05
1,1,1 Trichloroethane	<3.3	<3.3	<3.3	<3.3	<3.3	<3.3
Carbon Tetrachloride	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Trichloroethene	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Tetrachloroethylene	<1.05	<1.05	<1.05	<1.05	<1.05	<1.05

* background

4.3 Concrete

A total of six concrete chip samples were collected on December 7, 1989. Five of the samples were collected to assess the completeness of pit decontamination. A sixth sample was collected as a background sample. Figure 4.2 shows the sample locations.

Samples CS-1, CS-2, CS-3, CS-4, and CS-5 were collected from each wall of the pit and the floor. Wall samples were collected approximately 2.5 feet above the pit floor in the center of the wall. The floor sample was collected from the center of the floor.

The background sample CS-6 was collected in the same pit as the decontamination samples. This sample was collected immediately below the top of the pit wall near the southwest corner of the pit.

All concrete chip samples were collected by IT representative, Mr. Jacques Hill using a cleaned hand chisel and a hammer. Dislodged chips were allowed to fall on a fresh piece of polyethylene sheeting. Using a pair of new latex gloves, the sampler then collected the chips and transferred them directly into the sample jars.

Following sample collection, all sample jars were labelled, transferred to an iced cooler and hand delivered under full chain of custody to Averill for analysis.

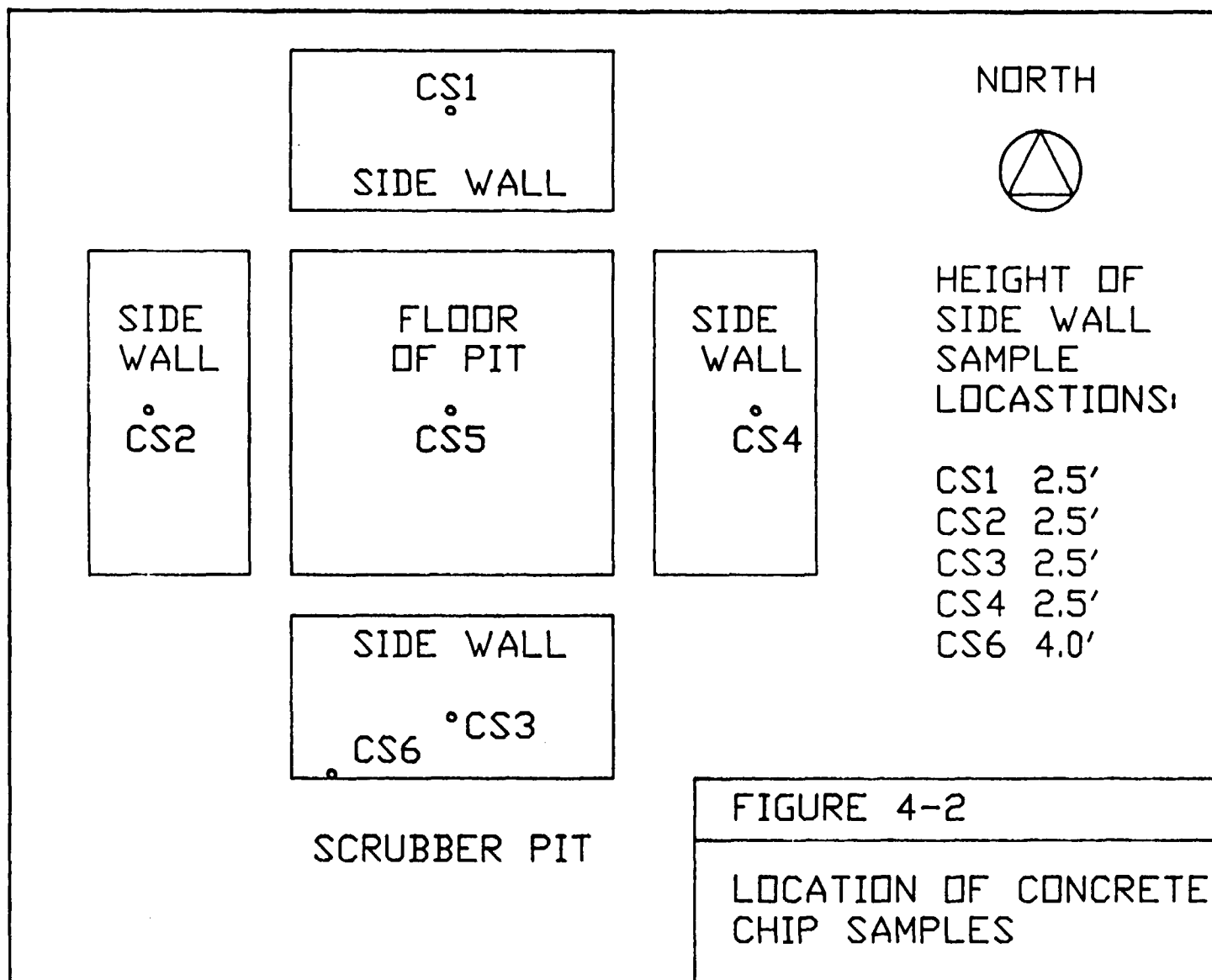


FIGURE 4-2

LOCATION OF CONCRETE CHIP SAMPLES

The validated analytical results for the Appendix C constituents are presented in Table 4-3 and the validated analytical results for EP Toxicity analysis are presented in Table 4-4. Mass analysis results for sample CS-5 show elevated levels of chromium and nickel which can be attributed to the sampling tool (steel chisel), which contains these metals. In general, the Appendix C constituent levels are found to match the background levels and the EP Toxicity results are below levels presented in Table 1 of 40 CFR 261.24.

TABLE 4-3

CONCRETE CHIP SAMPLE ANALYSIS (ppm)

	Target Clean Level	SAMPLE NUMBERS					
Parameter	Level	CS-1	CS-2	CS-3	CS-4	CS-5	CS-6*
<u>Metals</u>							
Arsenic	0.02	5.5	6.7	7.5	6.0	7.3	8.6
Barium	900	47	23	40	5.0	45	19
Cadmium	-	4.7	<1.3	<1.5	<1.3	<1.5	<1.5
Chromium	-	15	9.3	49	3.4	640	3.4
Chromium VI	90	<0.059	0.065	0.23	0.13	0.033	0.12
Copper	-	9.9	13	30	9.7	74	10
Lead	-	<2.1	<2.1	3.0	<2.1	9.8	4.4
Mercury	-	0.043	0.042	0.049	0.042	0.049	0.049
Nickel	300	19	8.9	54	<4.2	400	<4.9
Selenium	-	< .47	<0.45	<0.47	<0.51	<0.41	<0.49
Silver	50	<2.2	<2.2	<2.0	<2.3	3.4	<2.4
<u>Cyanide</u>							
Total	300	<0.48	<0.49	<0.48	<0.51	<0.49	<0.5
<u>Volatile Organics</u>							
Methylene Chloride	47	0.005	0.007	0.002	0.005	0.009	0.005
1,1 Dichloroethene	5.8	0.002	0.005	0.006	0.007	<0.0025	<0.0025
1,1,1 Trichloroethane	2000	0.022	0.096	0.13	0.031	<0.0025	0.018
Carbon Tetrachloride	2.7	<0.0025	<0.0025	<0.0025	<0.0025	<0.0025	<0.0025
Trichloroethene	32	0.002	<0.0025	<0.0025	<0.0025	<0.0025	<0.0025
Tetrachloroethylene	69	0.28	0.46	0.53	0.31	0.017	0.3

* background

TABLE 4-4

CONCRETE CHIP SAMPLE EP TOXICITY ANALYSIS (ppm)

<u>Parameter</u>	EP Toxicity <u>Levels</u>	<u>SAMPLE NUMBERS</u>					
		<u>CS-1</u>	<u>CS-2</u>	<u>CS-3</u>	<u>CS-4</u>	<u>CS-5</u>	<u>CS-6*</u>
<u>Metals</u>							
Arsenic	5	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Barium	100	0.30	0.16	0.26	0.22	0.31	0.21
Cadmium	1	<0.03	<0.03	0.04	<0.03	<0.03	<0.03
Chromium	5	0.06	0.06	0.07	0.06	<0.05	<0.05
Chromium VI	--	--	--	--	--	--	--
Copper	--	--	--	--	--	--	--
Lead	5	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Mercury	0.2	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
Nickel	--	--	--	--	--	--	--
Selenium	1	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Silver	5	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05

* background

5.0 DISCUSSION

5.1 Closure Procedures

Except as noted in sub-Section 5.2 closure activities conformed to the approved closure plan. Per the closure plan, all incinerator train components were dismantled and disposed of at a RCRA permitted secure landfill. These system components are considered properly closed.

The concrete pit and the ceiling were decontaminated according to the approved closure plan. The concrete chip samples from the pit exhibited Appendix C constituent levels similar to the background levels and did not exhibit the hazardous waste characteristic for EP Toxicity. The wipe samples from the ceiling exhibited Appendix C constituent levels similar to the background samples. Therefore, these areas can be considered properly closed as they meet the closure criteria.

5.2 Deviations

Due to unforeseen circumstances, certain procedures that were not included in the approved closure plan were implemented to assure proper closure. These are discussed below.

- (a) The concrete pad for the combustion chamber was not large enough to allow for adequate background sampling. Therefore, the entire pad and the footing were excavated and disposed of along with other debris at the RCRA permitted secure landfill. The concrete pad is considered properly closed.
- (b) A blended oil feed line (WFL2) was found plugged. It was flushed with steam to clear the blockage. The rinsate generated was treated as hazardous waste.

- (c) It was stated in the approved closure plan that if waste feed line WFL3 was not decontaminated after the initial cleaning, the same steps will be repeated. Initial rinsate sampling resulted in no detectable cyanide; however, several organic constituents were detected above the target clean levels. As a result, the decontamination procedure was modified by substituting a Citrikleen solution for the sodium hydroxide solution during the second round of line flushing. The validated analytical results from the final round of sampling indicated that all Appendix C constituent levels were below the target level. The cyanide feed line is considered closed properly.
- (d) Decontamination of all three waste feed lines was deemed incomplete following the initial round of line flushing. Decontamination procedure during line flushing were modified by using steam and Citrikleen solution since organic constituents were targeted for removal.

5.3 Incomplete Items

The validated analytical results from the final rinsate analyses (WFL-1A, WFL-2A and WFL-4A) from the two blended oil feed lines indicated that the levels of organic constituents were above the closure criteria. The closure of these two lines is deemed incomplete.

5.4 Specific Submittals

Specific submittals that constitute a complete closure certification for the incinerator train and the waste feed lines are identified and discussed below.

1. As-built Drawings:

Since all the equipment components that were closed have been removed and disposed of off-site and there was no new construction associated with this closure, as-built drawings are deemed unnecessary and are not included. The drawings and the photographs of the facility prior to closure are included in Appendices A and B, respectively.

2. Soil Verification Test Results:

Soil verification tests were not required by the approved closure plan.

3. Appendix IX Test Results:

Appendix IX testing was not required by the approved closure plan

4. Photographic Records of Closure

These are included in Appendix F.

5. Summary of Daily Logs

These are included in Appendix E.

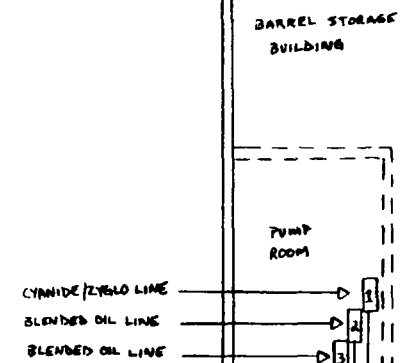
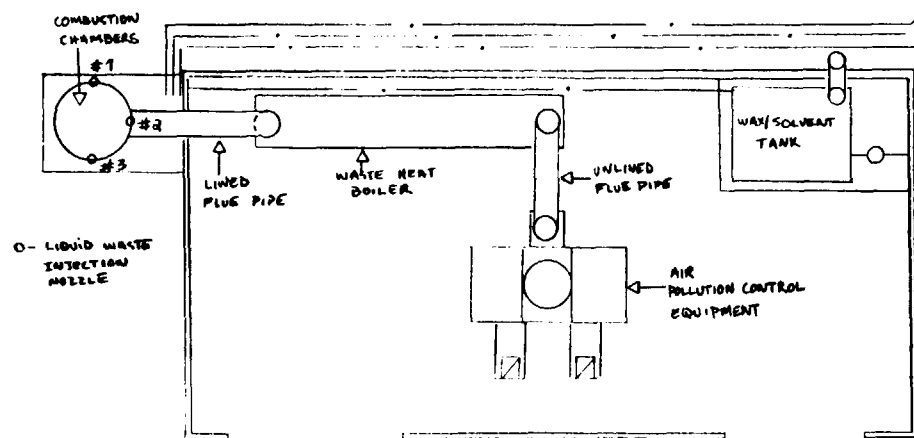
6. List of Minor Departures:

These are discussed in sub-Section 5.2.

APPENDIX A

Drawings of the Incineration System

PE- - B

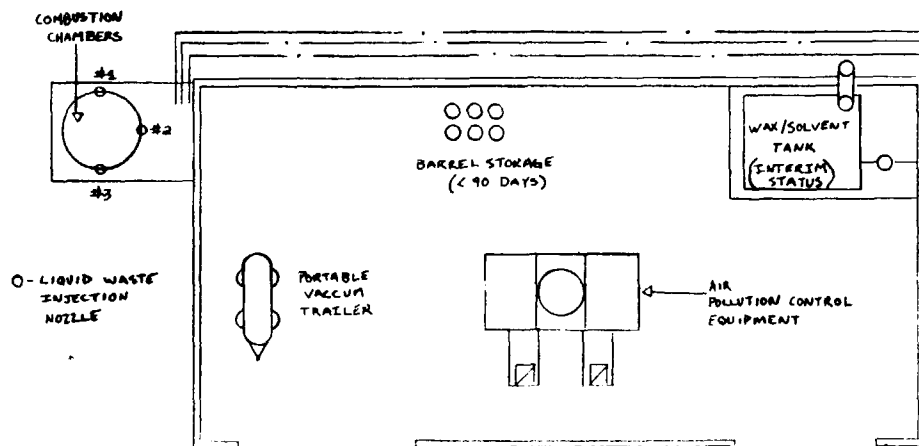


REV.	DESCRIPTION OF REVISION	DATE	DR. BY	APPR.
FIGURE 2		LOCATION CWTP		
INCINERATOR SKETCH LAYOUT - PRE 1988		SCALE NOT TO SCALE		
DRAWN BY SLS		DATE 6/22/89		
CHKD BY		DATE		
APP BY		DATE		
JOB ORDER NO				
DRAWING NO.		PE- - B		
SHEET NO.		NO OF SHEETS		

PRATT & WHITNEY
AIRCRAFT GROUP
 Manufacturing Division
 PLANT ENGINEERING DEPARTMENT
 EAST HARTFORD, CONNECTICUT 06108, U.S.A.



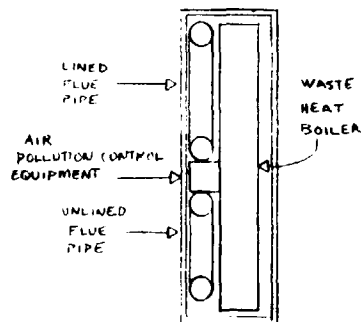
PE - - B



CYANIDE/ZYGLO LINE
BLENDED OIL LINE
BLENDED OR LINE

BARREL STORAGE BUILDING

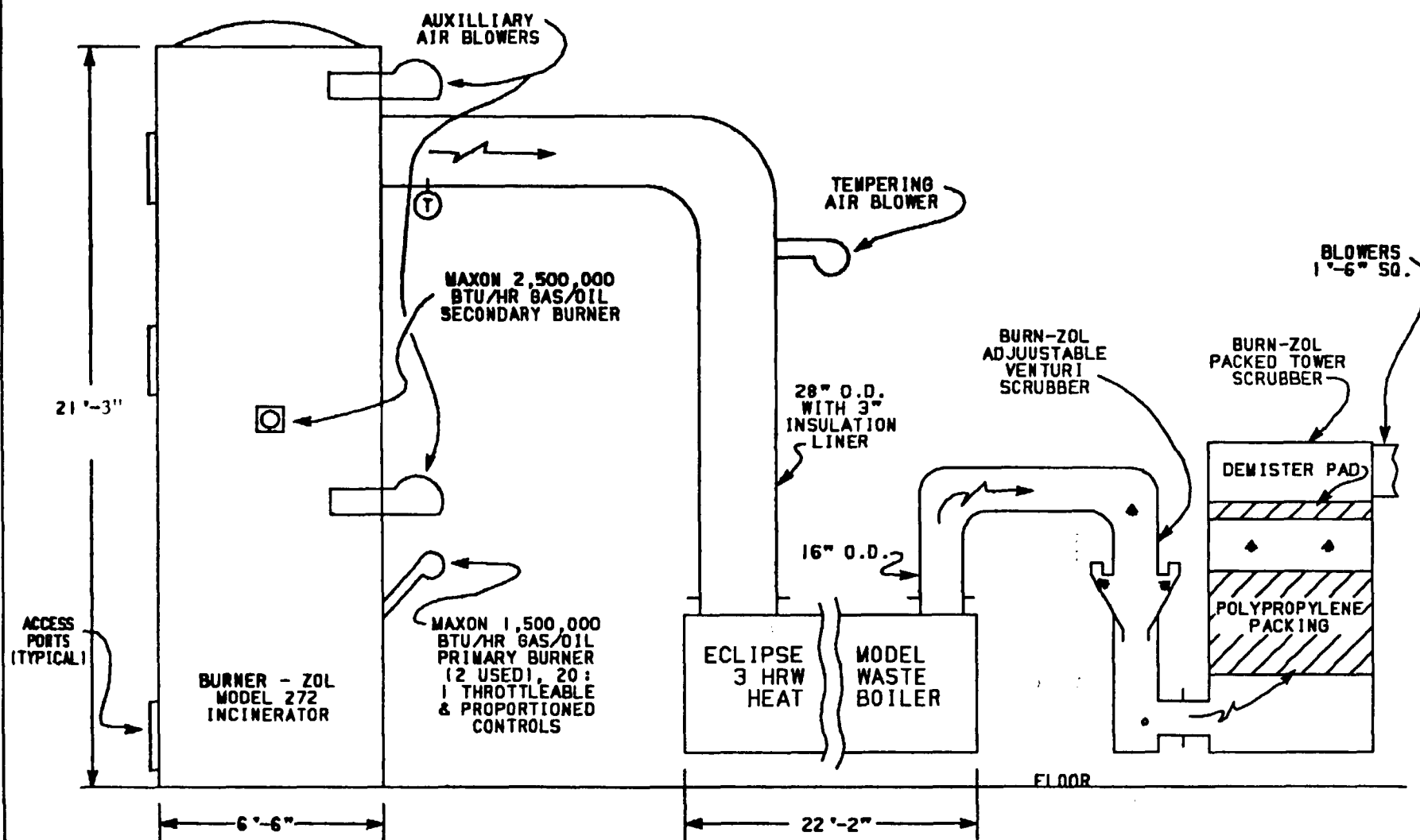
PUMP ROOM



REV.	DESCRIPTION OF REVISION	DATE	DR. BY	APPR.
<p>FIGURE 3 INCINERATOR SKETCH LAYOUT AS OF JUNE 22, 1989</p>				
<p>PRATT & WHITNEY AIRCRAFT GROUP</p>		<p>UNITED TECHNOLOGIES</p>		
<p>Manufacturing Division</p>				
<p>PLANT ENGINEERING DEPARTMENT</p>				
<p>EAST HARTFORD, CONNECTICUT 06108, U.S.A.</p>				
<p>LOCATION CWTP</p>		<p>SCALE NOT TO SCALE</p>		
<p>DRAWN BY SLS</p>		<p>DATE 6/22/89</p>		
<p>CKD BY</p>		<p>DATE</p>		
<p>APP BY</p>		<p>DATE</p>		
<p>JOB ORDER NO</p>		<p>DATE</p>		
<p>DRAWING NO. PE - - B</p>				
<p>SHEET NO.</p>		<p>NO OF SHEETS</p>		

HAZARDOUS WASTE INCINERATION SYSTEM

INSTALLED AT
PRATT & WHITNEY, EAST HARTFORD, CONN.



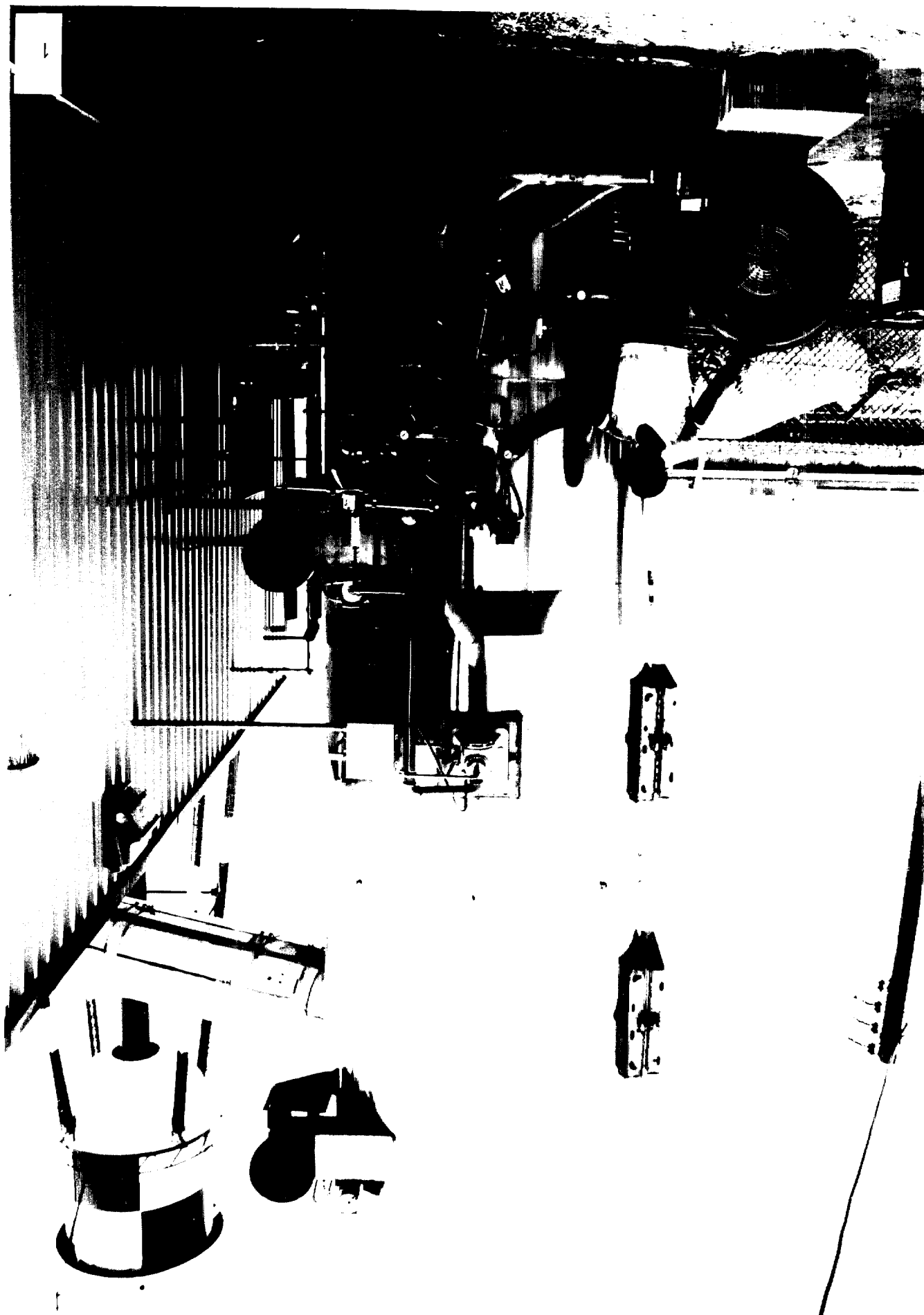
NOTE: A 1,200 ACFM COMBUSTION AIR
BLOWER FEEDS THE 3 INCINERATOR BURNERS

APPENDIX B

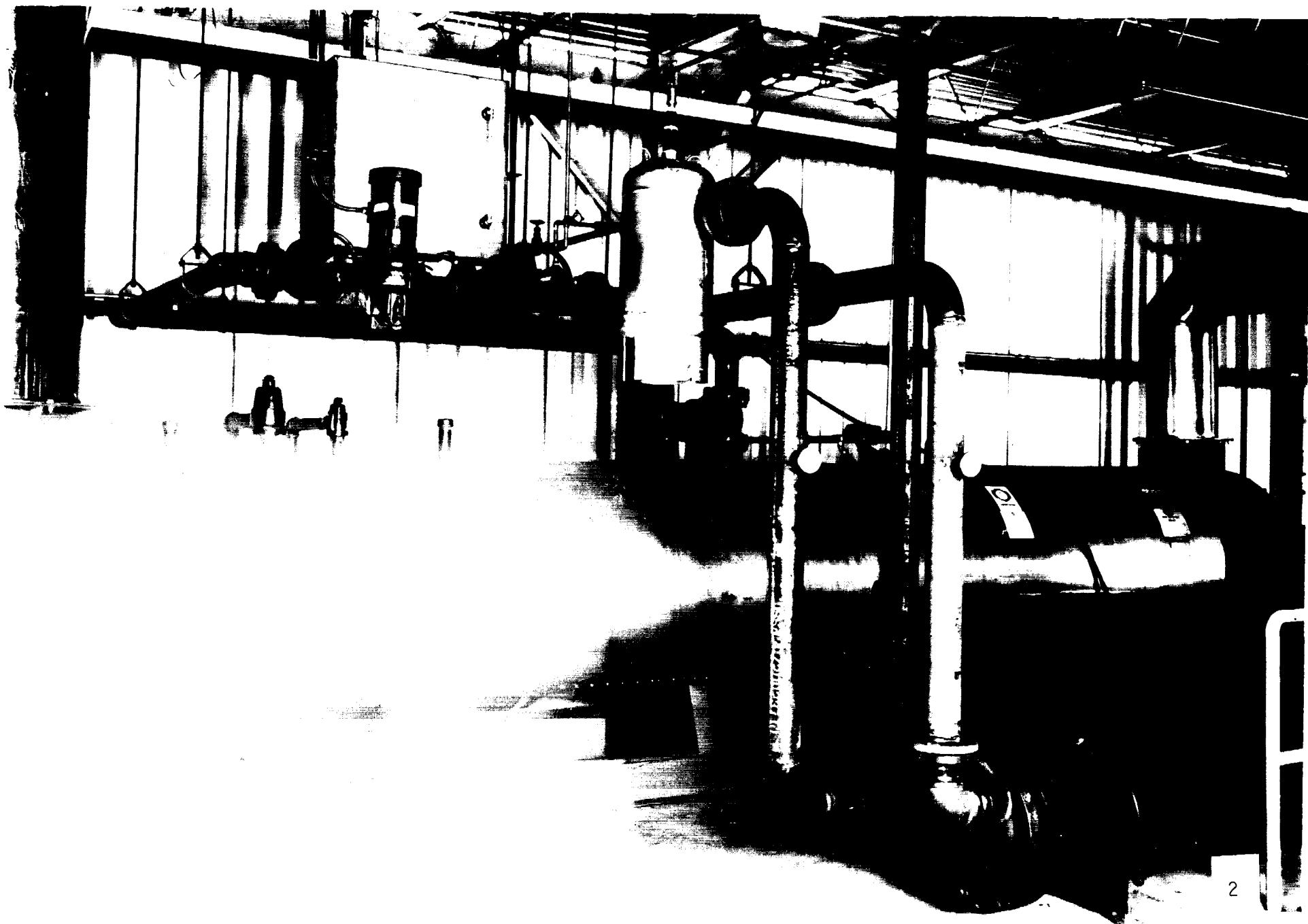
Photographs of the Incineration System

LIST OF PHOTOGRAPHS OF THE INCINERATION SYSTEM AS INSTALLED

<u>NUMBER</u>	<u>DESCRIPTION</u>
1	The combustion chamber located outside the building (81C2185-015)
2	The waste heat boiler located inside the building (81C2185-014)
3	The air pollution control system located in the pit inside the building (82C5872-001)



Originals in color.





APPENDIX C

List of Constituents Requiring Analysis

HAZARDOUS WASTE INCINERATOR CLOSURE PLAN

11.0 TESTING AND DETERMINATION PROCEDURES

A specific analytical parameter list has been developed for all ash/residue, waste feed line rinsate and concrete chip samples collected during incinerator train closure activities. As presented in Table 2 this list is representative of all listed hazardous waste constituents potentially present in the cyanide solution and wax/solvent mixture, the only waste streams burned in the incinerator. In addition, the characteristic hazardous waste parameters of corrosivity and extraction procedure toxicity have been deemed applicable and are therefore included.

TABLE 2

LISTED HAZARDOUS WASTE CONSTITUENT PARAMETERS AND ANALYTICAL METHODS

<u>Parameter</u>	<u>Aqueous</u> (Rinsate)	<u>Solid-Mass Analysis</u> (Concrete chip/ ash/residue)
<u>Metals</u>		
Arsenic	3010/7060	3050/7060
Barium	3010/6010	3050/6010
Cadmium	3010/6010	3050/6010
Chromium (Total)	3010/6010	3050/6010
Chromium VI	-- /7196	-- /7196
Copper	3010/6010	3050/6010
Lead	3010/6010	3050/6010
Mercury	3010/7470	3050/7471
Nickel	3010/6010	3050/6010
Selenium	3010/7740	3050/7740
Silver	3010/6010	3050/6010
<u>Cyanide</u>	-- /9010	-- /9010
<u>Volatile Organic Compounds</u>		
Carbon Tetrachloride	5030/8010	5030/8010
1,1-Dichloroethylene	5030/8010	5030/8010

HAZARDOUS WASTE INCINERATOR CLOSURE PLAN

Methylene Chloride	5030/8010	5030/8010
Tetrachloroethylene	5030/8010	5030/8010
1,1,1-Trichloroethane	5030/8010	5030/8010
Trichloroethylene	5030/8010	5030/8010

* 5030/8010 - preparation method / analytical method

The analytical methods presented above have been selected from the third edition of EPA Publication SW-846 - Test Methods for Evaluating Solid Waste. The designated laboratory will follow all applicable internal QA/QC procedures outlined in SW-846.

Upon receipt of the analytical data, an initial evaluation of the results will be performed through data validation. Data validation includes a review of field QA/QC procedures (i.e. trip blanks, field blanks) and laboratory QA/QC procedures (i.e. holding times, blind duplicate analysis, surrogate recoveries). Data points that are not adequately supported by the QA/QC procedures will be referred to the sampling team and/or the laboratory for appropriate corrective actions.

APPENDIX D

Closure Criteria

HAZARDOUS WASTE INCINERATOR CLOSURE PLAN

TABLE 1

TARGET CLEANUP LEVELS WASTE FEED LINE RINSATE SAMPLING

<u>CONSTITUENT</u>	<u>CONCENTRATION (mg/l)</u>
Arsenic ¹	0.05
Barium ¹	1.0
Cadmium ¹	0.01
Chromium ¹	0.05
Copper ²	1.0
Lead ¹	0.05
Mercury ¹	0.002
Selenium ¹	0.01
Silver ¹	0.05
Cyanide ³	0.2
Carbon Tetrachloride ¹	0.005
1,1-Dichloroethylene ¹	0.007
Methylene Chloride ⁴	0.025
Tetrachloroethylene ⁴	0.02
1,1,1-Trichloroethane ¹	0.20
Trichloroethylene ¹	0.005

1. EPA Primary Drinking Water Standard (MCL)
2. EPA Secondary Drinking Water Standard (SMCL)
3. Recommended Contaminant Level (RMCL)
4. Connecticut Department of Health Services - Action Level

HAZARDOUS WASTE INCINERATOR CLOSURE PLAN

TABLE 2

HEALTH BASED RISK LEVELS CONCRETE CHIP SAMPLING

<u>CONSTITUENT</u>	<u>CONCENTRATION (mg/kg)</u>
Arsenic	0.02
Barium	900
Cadmium	*
Chromium vi	90
Copper	*
Lead	*
Mercury	*
Nickel	300
Selenium	*
Silver	50
Cyanide	300
Carbon Tetrachloride	2.7
1,1-Dichloroethylene	5.8
Methylene Chloride	47
Tetrachloroethylene	69
1,1,1-Trichloroethane	2000
Trichloroethylene	32

Risk levels obtained from RCRA Facility Investigation (RFI)
Guidance Document (EPA Publication SW-87-001)

* No risk levels identified

APPENDIX E

Copies of Daily Logs

**PRATT & WHITNEY
BURN-ZOL HAZARDOUS WASTE INCINERATOR
DAILY FIELD LOG
IT PROJECT NUMBER 515153**

Monday 11/13/89

A 5-man crew mobilized from Pittsburgh, Pa., to E. Hartford, Connecticut. After arriving in E. Hartford, the crew contacted Mr. Scott Singer, went to the plant for identification processing, and walked the job site area to discuss objectives and scheduling.

Tuesday 11/14/99

All piping outside of the Burn-Zol unit was dismantled by means of pipe wrenches or cold cutting with reciprocating saw.

Two crew members began removing the outer shell and fiberglass insulation from the large heat exchanger located inside the incinerator building.

All dismantled piping was laid on a double layer of 6 mil polyethylene plastic and covered until a roll off box was delivered.

Wednesday 11/15/89

A crew member continued to dismantle the large heat exchanger while the other two crew members plumbed the waste feed lines to enable us to flush the lines.

Jack Hill from ITFAS arrived on-site to take samples after the waste feed lines had been flushed and rinsed.

At approximately 1330 hours, we began flushing the waste feed lines.

The Blend Oil Line (WFL1) was flushed using a 3-step method:

Step 1 - Approximately 25 gallons of plant tap water was flushed through the line.

Step 2 - Approximately 25 gallons of Citrikleen solution (30%) was pumped through the line.

Step 3 - Approximately 25 gallons of plant tap water was flushed through the line.

The Cyanide Feed Line (WFL3) was flushed using the same 3-step method except that a Sodium Hydroxide solution (25%) was used instead of the Citrikleen solution.

The Zyglo Feed Line (WFL2) was blocked somewhere in the line and could not be flushed. A decision was made by Scott Singer to connect steam to the line to loosen the material.

The flushing operation began outside of the incinerator building. Water and solutions were pumped from this point to the pump room under the drum storage building where the affluent was contained in 55-gallon drums.

Plant tap water was sampled for influent background analysis before the flushing process began.

Affluent samples were taken at the end of the third rinse.

Thursday 11/16/89

Refractory brick that was laying inside the Burn-Zol unit was removed by hand.

Refractory from the large heat exchanger was removed by electric chipping hammer and staged on poly inside the incinerator building.

Materials were purchased and construction of the poly barrier began.

The Burn-Zol unit was to be lowered to the ground today, but due to high winds, this operation was postponed until Friday 11/17/89.

Friday 11/17/89

The crew prepared the Burn-Zol unit for lowering it to the ground. Refractory brick that was blocking the top opening was knocked out. A cable was rigged through the top openings.

At approximately 1130 hours, the Burn-Zol unit was lowered to the ground and staged on poly.

The large heat exchanger was moved outside the incinerator building and crew member began torch cutting it.

Saturday 11/18/89

One crew member continued dismantling the large heat exchanger.

Three crew members removing refractory from Burn-Zol unit.

All refractory and tubing from heat exchanger were placed in roll off boxes and covered overnight.

Large pieces of the heat exchanger shell were staged on poly and covered overnight.

Monday 11/20/89

Crew continued to dismantle large heat exchanger and remove refractory from the Burn-Zol unit.

Tuesday 11/21/89

Continued removing refractory from the Burn-Zol unit and started cutting the inner and outer shells.

A steam line was connected to the Zyglo Feed Line (WFL2). Steam was applied to the line for approximately six (6) hours. After approximately 25 gallons of product was retrieved, the line was flushed by the 3-step method by using the Citrikleen solution (30%). Effluent samples of the final rinse were taken by Mr. Scott Singer of PWA.

By the end of the shift, the Burn-Zol unit had been completely dismantled.

Wednesday 11/22/89

The large heat exchanger has been completely dismantled.

The small heat exchanger was moved outside and dismantled.

Construction of the poly barrier was completed.

The incinerator building was cleaned out in preparation of inside work.

The crew returned home for Thanksgiving and will return on-site on Monday, 11/29/89.

Monday 11/27/89

An entrance was constructed through the poly barrier.

The crew began dismantling the large scrubber unit and associated piping.

Tuesday 11/28/89

Waste feed lines in the pump room were removed.

The large scrubber was removed and lowered to the ground. The shell was cut in half, the Tellerette packing was removed, and both halves were staged under poly with the Burn-Zol pieces.

One of the plastic tanks in the pit area was completely dismantled. The second plastic tank was 90 percent dismantled.

Wednesday 11/29/89

All contents of the pit area were dismantled and removed.

Crew began dismantling the air pollution control equipment.

The concrete pad that the Burn-Zol unit was placed on was broken up by means of a hydraulic hammer mounted on a backhoe.

Thursday 11/30/89

Continued dismantling equipment and piping inside the incinerator building.

The exhaust stacks that extended through the roof of the incinerator building were cut down, cut into pieces, and lowered to the ground. The pieces were staged under poly along with the Burn-Zol and heat exchanger pieces.

All pieces of the concrete pad were excavated and placed into roll off boxes. A footer was discovered under the concrete pad. Mr. Scott Singer requested that it also be excavated and removed.

The footer was broken into pieces, excavated, and placed outside the work area. The pieces will be taken off-site by the construction crew that was excavating for foundation work.

Friday 12/1/89

Continued to dismantle equipment and piping inside the incinerator building.

Sample results from waste feed line affluents indicated high concentration of organics. It was decided by Mr. Scott Singer that the three lines be steamed for a number of hours and then filled with Citrikleen solution.

The Blend Oil Feed Line (WFL1) was flushed with steam for 7.5 hours and filled with Citrikleen.

Two roll off boxes were weighed, manifested, and taken off-site for transportation to the CWM Emille, Alabama facility.

Dismantlement of equipment and associated piping inside the incinerator building is 100 percent complete.

A flatbed tractor-trailer arrived on-site to transport the large pieces of steel shells.

Saturday 12/2/89

Seventy percent of all electrical control panels and associated conduit were dismantled and staged on pallets outside the incinerator building. PWA will dispose of these components.

All pieces of the Burn-Zol heat exchanger and scrubber units were loaded onto the flatbed trailer. Side boards were put on and the trailer was tarpped and secured.

Flushed the Zyglo Feed Line (WFL2) with steam for five hours.

Monday 12/4/89

Continued dismantling and removing electrical components inside the incinerator building.

Flushed WFL2 with steam for one more hour and then filled it with Citrikleen.

Flushed the Cyanide Feed Line (WFL3) with steam for seven hours.

Dismantlement and removal of equipment inside the incinerator building is 100 percent complete.

The flatbed trailer was weighed, manifested, and transported off-site for disposal.

Tuesday 12/5/89

Filled WFL3 with Citrikleen.

Constructed a decon pad and deconed all equipment and tools by means of steam cleaning.

The floor of the pit area was steam cleaned. The rinsate was pumped out and taken by CWTP personnel.

Wednesday 12/6/89

The ceiling inside the incinerator building was wiped down by means of spraying the ceiling with a Citrikleen solution and wiping with clean lint free cloths.

Thursday 12/7/89

The poly barrier was dismantled and removed from the building.

Jack Hill from ITFAS arrived on-site to take samples.

All three waste feed lines were flushed again using the 3-step method. Effluent samples were taken.

Wipe samples were taken from four areas of the ceiling in the incinerator building. Two background wipe samples were taken over the wax solvent tank area.

Concrete chip samples were taken from the pit area.

Friday 12/8/89

The crew inventoried and packed up all tools and equipment in preparation for demobilization.

The waste feed lines outside the incinerator building were capped.

The last two roll off boxes were weighed, manifested, and transported off-site for disposal.



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Crew: T. Dornier
P. Andreas
F. Paul
K. Hohman
J. Pail

DAILY SITE REPORT

Job Name Pratt & Whitney

Date 11/13/89

Job Number 515135

Day Mon

Weather Conditions Sunny, Mild

Site Conditions Dry

Daily Work Description and Comments (tests, changes, claims, etc.): _____

Mobilized to Hartford Ct. - Met with Scott Singer, completed
Identification process. Walked the jobsite area and discussed
Scheduling

Schedule and Performance Status: _____

Additional-Extra Unanticipated Cost Factors: _____

Orders, Directives, Notices and Protests: _____

Meetings: _____

Visitors: _____

T. Dornier



INTERNATIONAL
TECHNOLOGY
CORPORATION

Crew: T. Dornier
P. Andreas
F. Paul
K. Hohman
J. Paul

DAILY SITE REPORT

Job Name Pratt & Whitney

Date 11/14/89

Job Number 515153

Day Tue

Weather Conditions Sunny, Warm

Site Conditions Dry

Daily Work Description and Comments (tests, changes, claims, etc.):

0700 - Tailgate Safety Meeting

0715 - Unloaded Trailer

0730 - Began dismantling all piping from the Burn-201 unit. Piping was removed with pipe wrenches or by cold cutting with sawzalls. 30 min. delay because of an air line still live. P&W's maintenance men worked on shutting it off. All piping was laid on plastic & covered.

1330 - All piping removed from Burn-201. Began removing sheeting & insulation from large heat exchanger inside the building - Continued til' end of shift

1400 - Began disconnecting piping in pump room

Schedule and Performance Status: All piping removed from Burn-201 unit - Flush lines tomorrow. Crane scheduled for Thurs.

Additional-Extra Unanticipated Cost Factors:

Orders, Directives, Notices and Protests:

Meetings: Meeting with Scott Singer about Time Sheets, Site Reports, Scheduling

Visitors:

Front End Loader Delivered

Tom Dornier



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CORPORATION

Crew T. Dornier
P. Dornier
L. Dornier
K. Dornier
J. Dornier

DAILY SITE REPORT

Job Name Pratt Whitney

Date 11/15/19

Job Number 515153

Day Wed

Weather Conditions Rain in AM 60°

Site Conditions Wet

Daily Work Description and Comments (tests, changes, claims, etc.): 0700- Tailgate Safety Meeting

0715- 2 men removing refractory insulation from ends of heat exchanger (boiler)

2 men doing plumbing necessary for line flushing

1000- Jack Hill from IT on site

1100- All pumps & hoses set up - ready for flushing lines

- Waiting on Larry Lucas for radios -

1330- Started flushing lines - flushed 1 waste oil line and the cyanide

line. Jack Hill took samples after the third rinse. The 2nd waste oil line is

blocked.

1630- Plumbed an airline to the blocked oil line but it would not clear. Will

try steam when its available

Schedule and Performance Status: The blocked oil line will be flushed when

steam is available

Additional-Extra Unanticipated Cost Factors: _____

Orders, Directives, Notices and Protests: _____

Meetings: _____

Visitors: Jack Hill-IT FAS, Edison NJ

2nd Air Lift delivered

T. Dornier



Crew T Dornier
P Dornier
F Paul
K Huhmann
J Paul

DAILY SITE REPORT

Job Name Pratt & Whitney

Date 11/16/89

Job Number 55133

Day Thur

Weather Conditions Heavy rain, high winds

Site Conditions Wet

Daily Work Description and Comments (tests, changes, claims, etc.): 0700 Tailgate Safety Meeting

0715 - Started removing refractory from inside Burn-zol incinerator.

- Loaded material into bucket of front loader

- Loaded refractory from heat exchanger into bucket of front loader

- Covered front loader bucket with poly

- Cleaned up area around heat exchanger

1300 - Purchased lumber and began constructing poly barrier. Frame work finished by end of shift

Schedule and Performance Status: Will not attempt to lower Burn-zol unit because of weather conditions

Additional-Extra Unanticipated Cost Factors: _____

Orders, Directives, Notices and Protests: _____

Meetings: Meeting with Scott Singer. Discussed flushing of blocked oil line. Possibility of a closed valve near the storage area. Steam is now available if needed

Visitors: _____

Tom Dornier

1 Roll Off Box delivered



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CORPORATION

Crew: T. Dormer
P. Andreas
F. Paul
K. Hohman
J. Pail

DAILY SITE REPORT

Job Name Pratt + Whitney

Date 11/17/89

Job Number 515153

Day Fri

Weather Conditions Clear, Cold

Site Conditions Dry

Daily Work Description and Comments (tests, changes, claims, etc.): 0700 - Tailgate Safety Meeting
0715 - Began preparing to lower Burn-Zol unit to ground. Knocked out refractory
brick that was blocking the top opening. Moved Roll Off box to the front of the
incinerator bldg.
0900 - Applied for Burning Permit. Dragged the heat exchanger outside & began cutting it.
1000 - Crane operator from PWA arrived. Rigged a cable thru the top part of the
Burn-Zol unit & hooked on to the crane.
1130 - Burn-Zol unit lowered to the ground then staged outside ~~the~~ the incinerator
bldg. on poly
1400 - Began cutting the outer shell of the Burn-Zol unit
1700 - Top half of heat exchanger removed. All pieces covered overnight

Schedule and Performance Status: _____

Additional-Extra Unanticipated Cost Factors: _____

Orders, Directives, Notices and Protests: _____

Meetings: _____

Visitors: _____

Tom Dormer



INTERNATIONAL
TECHNOLOGY
CORPORATION

Crew

T. Dormer

P. Andreas

F. Paul

K. Hohman

J. Paul

DAILY SITE REPORT

Job Name Pratt + Whitney

Date 11/18/89

Job Number 515153

Day Sat

Weather Conditions Cloudy, Cold

Site Conditions Dry

Daily Work Description and Comments (tests, changes, claims, etc.): 0900 - Tailgate Safety Meeting

0915 - 1 man cutting heat exchanger

3 men removing refractory from Burnzel unit

Continued these operations til end of shift at 1530

All pieces covered with poly at end of shift

Schedule and Performance Status: _____

Additional-Extra Unanticipated Cost Factors: _____

Orders, Directives, Notices and Protests: _____

Meetings: _____

Visitors: _____

John Dormer



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Equipment: 1 - pick up
1 - 3yd Loader
2 - Man Lifts
2 - Demo Saws
2 - Demo Hammers
1 - Roll off
1 - Equip. Trailer 1 - Roll off Box

Crew: T. Dörner
P. Andreas
F. Paul
K. Hohman
J. Paul

DAILY SITE REPORT

Job Name Pratt & Whitney

Date 11/20/89

Job Number 515153

Day Mon

Weather Conditions Cloudy, Cool, Rain in AM

Site Conditions Wet

Daily Work Description and Comments (tests, changes, claims, etc.): 0700 - Tailgate Safety Meeting
0715 - Continued dismantling heat exchanger and removing refractory
from Burn 201 unit for entire day.

1730 - End of Shift

Schedule and Performance Status: 2nd Roll Off being delivered tomorrow.
Will attempt to flush Zyglo line with steam tomorrow.

Additional-Extra Unanticipated Cost Factors: _____

Orders, Directives, Notices and Protests: _____

Meetings: _____

Visitors: _____

John Dörner



Equipment: 1- Pick up
1- Equip. trailer
1- 3yd loader
1- man lift
1- Sissors lift
2- Demo Saws
2- Demo Hammers
2- Roll off boxes

Crew: T. Dormer
P. Andreas
F. Paul
K. Hohman
J. Paul

DAILY SITE REPORT

Job Name Pratt + Whitney

Date 11/21/89

Job Number 515153

Day Tue

Weather Conditions Cold, Windy

Site Conditions Dry

Daily Work Description and Comments (tests, changes, claims, etc.): 0700 - Tailgate Safety Meeting

0715 - 1 man cutting shell of Burn 2d unit

1 man removing refractory - 2 men hooking up steam line to 2ygd line

0800 - Turned on steam to 2ygd line - very little coming out other end

0830 - All refractory removed from ~~2ygd~~ Burn 2d unit

1100 - Retrieved approx 25 Gal of Green liquid from 2ygd line. Shut off steam.

Re-plumbing to run water thru line.

1230 - 2nd Roll Off Box delivered. Weighed the full one - 14,000 lb over - will have to take off

1400 - ~~2ygd~~ Flushed 2ygd line with water, citricken, water. Clear water coming out.

1445 - Scott Singer takes samples of final flush water

1730 - End of Shift

Schedule and Performance Status: Burn 2d dismantling completed. Large heat exchanger dismantling 90% complete

Additional-Extra Unanticipated Cost Factors: _____

Orders, Directives, Notices and Protests: _____

Meetings: _____

Visitors: _____

Exchanged man lift for 1 Sissors lift



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Equipment: 1- Pickup
1- Equip Trailer
1- 3yd loader
1- Man lift
1- Sissor lift
2- Demo Saws
2- Demo Hammers
2- Roll off boxes

Crew: T. Dorman
P. Andrews
K. Hohman
J. Pail
J. Sardello

DAILY SITE REPORT

Job Name Pratt + Whitney

Date 11/22/89

Job Number 515153

Day Wed

Weather Conditions Clear, Cold

Site Conditions Dry

Daily Work Description and Comments (tests, changes, claims, etc.): 0700 - Tailgate Safety Meeting

0715 - Continued dismantling large heat exchanger

0730 - Began construction of polyethylene wall

0900 - Large heat exchanger completely dismantled

0930 - placed small heat exchanger outside + began dismantling

1200 - small heat exchanger completely dismantled - placed in roll off

1300 - Poly wall completed

1330 - Cleaned out incinerator room of all debris

1400 - Placed all equipment inside incinerator room

- Covered roll off boxes + Burn 201 pieces

1430 - End of Shift

Schedule and Performance Status: Flat bed scheduled for Tue (11/28/89) for

Transporting pieces of Burn 201 unit

Additional-Extra Unanticipated Cost Factors: _____

Orders, Directives, Notices and Protests: _____

Meetings: _____

Visitors: _____

Tom Dorman



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TECHNOLOGY
CORPORATION

Equipment: 1- Pick up
1- Equip trailer
1- 3yd loader
1- Man lift
1- Scissor Lift
2- Demo Saws
2- Roll Off Boxes

Crew: T. Dormer
P. Andreas
K. Hohman
V. Pail
J. Sardello

DAILY SITE REPORT

Job Name Pratt + Whitney

Date 11/27/89

Job Number 515153

Day Mon

Weather Conditions Clear, Cool

Site Conditions Dry

Daily Work Description and Comments (tests, changes, claims, etc.): 1200: Arrived on Site

1300 - Constructed a doorway thru the poly wall.

1330 - Began dismantling scrubber unit

1630 - Began removing pipe inside pump room

1730 - End of Shift

Schedule and Performance Status: Sea Land cannot supply Roll Off boxes when needed.
Contacted Freehold Cartage Inc. of Freehold N.J. They will deliver
a roll off box tomorrow

Additional-Extra Unanticipated Cost Factors: _____

Orders, Directives, Notices and Protests: _____

Meetings: _____

Visitors: _____

For Dormer



INTERNATIONAL
TECHNOLOGY
CORPORATION

Equipment: 1- Pickup
1- Equip trailer
1- 2yd loader
1- Man lift
1- Sissor Lift
2- Demo saws
3- Roll off Boxes

Crew: T. Dornier
P. Andreas
K. Hohman
T. Paul
J. Sardello

DAILY SITE REPORT

Job Name Dratt + Whitney

Date 11/28/89

Job Number 515153

Day Tue

Weather Conditions Cool, Rain in AM

Site Conditions Wet

Daily Work Description and Comments (tests, changes, claims, etc.): 0700 - Tailgate Safety Meeting

0715 - Two men continue removing pipes from pump room

- Two men continue dismantling scrubber

1100 - All piping + conduit attached to scrubber removed. Torch cut part of railing around pit. Extracted scrubber from pit area by forklift.

1300 - Laid scrubber down on the floor + began saw cutting in half

- 2 men begin cleaning out pit area

1530 - Scrubber unit is cut in half - Top half staged outside. Began removing Tellerette packing + placing in roll off.

1700 - Scrubber unit completely dismantled. 1 Plastic tank in pit completely dismantled 2nd tank 90% dismantled 1730 - End of Shift

Schedule and Performance Status: Flatbed trailer for Burn 201 pieces didn't arrive

Additional-Extra Unanticipated Cost Factors: Hit overhead heater with forklift when moving scrubber unit - Steam leaking. Shut off steam

Orders, Directives, Notices and Protests:

Meetings:

Visitors:

Ami Dornier

1100 - Roll off box from Freehold Cartage Inc. delivered



INTERNATIONAL
TECHNOLOGY
CORPORATION

Equipment
1- Pick up
1- Equip Trailer
1- 2yd loader
1- manlift
1- scissor lift
2- Demo saws
3- Roll off Boxes
1- Cat 416 Backhoe/Loader

Crew
T Danner
P. Andreas
K Nohman
J Pail
J Sardello

DAILY SITE REPORT

Job Name Pratt & Whitney

Date 11/29/89

Job Number 515153

Day Wed

Weather Conditions Clear, Cold

Site Conditions Dry

Daily Work Description and Comments (tests, changes, claims, etc.): 0700- Tailgate Safety Meeting

0715- Continued dismantling contents of pit: Plastic tank, motors, steel frame, etc.

1100- Pit area completely cleaned out. Man from CWT pumped out water from pit

1300- Began removing air pollution control equipment

1400- Backhoe with hammer attachment delivered; Began breaking up BurnZol pad

1600- BurnZol pad broken up, will load into Roll offs on Thurs or Fri

1630- Transferred some debris from Roll off #1 to Roll off #2

1730- End of shift

Schedule and Performance Status: Dismantling of equipment inside bldg. 75% Complete. 4th Roll Off Box delivered tomorrow

Additional-Extra Unanticipated Cost Factors: _____

Orders, Directives, Notices and Protests: _____

Meetings: Meeting with Scott Singer - Sample results from Blend Oil Feed line indicates high concentration of Organics. Will Flush with Steam

Visitors: _____

T Danner



INTERNATIONAL
TECHNOLOGY
CORPORATION

Equipment
1- Pick up
1- Equip. trailer
1- Angel loader
1- Cat 416 backhoe
1- Man lift
1- Sissor lift
2- Demo Saws
4- Roll off Boxes

Crew: T. Dormer
P. Andrews
K. Hohman
J. Paul
J. Sardello

DAILY SITE REPORT

Job Name Pratt + Whitney

Date 11/30/89

Job Number 515153

Day Thurs.

Weather Conditions Cloudy, Cold

Site Conditions Dry

Daily Work Description and Comments (tests, changes, claims, etc.): 0700 - Tailgate Safety Meeting

0715 - Continue dismantling equipment inside bldg.

1030 - Bucket for backhoe delivered - mounting onto backhoe

1045 - 2 men on roof of Bldg cutting down exhaust stacks

1045 - 4th Roll Off Box delivered

1330 - Both exhaust stacks cut into pieces and lowered from roof

1400 - All concrete from Burn 201 pad removed. Discovered footer around the perimeter of the pad. Will excavate and remove as per Scott Singer

1600 - Excavated around footer under Burn 201 pad. Footer is 1 piece - will have to demolish with hydraulic hammer

1730 - End of Shift - Footer demolished + excavated; backfilled hole

Schedule and Performance Status: Removing equipment from inside of bldg 90%

Complete. Cannot plumb steam into broken pipes in pump room - will attempt this tomorrow

Additional-Extra Unanticipated Cost Factors: _____

Orders, Directives, Notices and Protests: _____

Meetings: _____

Visitors: Bill Gadie, Skip Brennan - I.T. Corp.

T. Dormer



INTERNATIONAL
TECHNOLOGY
CORPORATION

Equipment

- 1- Pickup
- 1- Equip Trailer
- 1- 2 yd loader
- 1- Cat 416 Backhoe/Loader
- 1- Man Lift
- 1- Scissor Lift
- 2- Demo Saws
- 4- Roll Off Boxes

Crew
T. Dornier
P. Andreas
K. Hokama
T. Paul
J. Sardello

DAILY SITE REPORT

Job Name Pratt+Whitney

Date 12/1/89

Job Number SL5153

Day Fri

Weather Conditions Clear, Cold

Site Conditions Dry

Daily Work Description and Comments (tests, changes, claims, etc.): 0700 - Tailgate Safety Meeting

0705 - Continued dismantling equipment inside bldg.

- Discovered that there is still power in one of the control panels to be removed. Contacted Rich - he'll get an electrician to lock it out.

0900 - Truck from Sea Land arrived to transport 1 roll off box to landfill

1300 - Plumbing product feed lines to flush with steam

1330 - Truck from Sea Land arrived for 2nd Roll Off. Both Roll Offs weighed, manifested and transported off site

1400-1700 - Flushed WFL1 with steam

1600 - Flat bed truck arrives

1730 - End of Shift

Schedule and Performance Status: Dismantling of equipment inside bldg 100% complete. will dismantle all electrical components tomorrow

Additional-Extra Unanticipated Cost Factors: _____

Orders, Directives, Notices and Protests: Cut and remove copper water line feeding the wax solvent tank - as per Rich.

Meetings: _____

Visitors: _____

T. Dornier



INTERNATIONAL
TECHNOLOGY
CORPORATION

Equipment:
1- Pickup
1- Equip. Trailer
1- 2yd loader
1- Cat 416 Backhoe/Loader
1- Man Lift
1- Sissor Lift
2- Demo Saws
2- Roll Off Boxes

Gen T. Dornier
P. Andrews
K. Hohman
J. Paul
J. Sardello

DAILY SITE REPORT

Job Name Pratt + Whitney

Date 12/2/89

Job Number 575153

Day Sat.

Weather Conditions Cloudy, Cold

Site Conditions Dry

Daily Work Description and Comments (tests, changes, claims, etc.): 0700 - Tailgate Safety Meeting

0715 - 2 men inside bldg removing electrical components

- 3 men Loading Flat bed with Burn 2d pieces

0800 - Continued flushing WFL 1 with Steam until 1030

1030 - Started Flushing WFL 2 with steam

1300 - All pieces of Burn 2d unit + scrubber unit loaded onto Flat bed.

1330 - Piece of conduit loaded into Non Hazardous roll off box.

1400 - 2 large pieces of Burn 2d exhaust Flute were broken up and placed into roll off box

1530 - End of Shift

Schedule and Performance Status: Removal of electrical components 70% complete. Manlift not working - need mechanic in on Monday

Additional-Extra Unanticipated Cost Factors: _____

Orders, Directives, Notices and Protests: _____

Meetings: _____

Visitors: _____

T. Dornier



INTERNATIONAL
TECHNOLOGY
CORPORATION

Equipment: 1- Pick up
1- Equip Trailer
1- 2yd Loader
1- Cat 416 Backhoe/loader
1- Man Lift
1- Sissor lift * 1. Fork Lift
2 Decon Saws
2 Roll off Boxes

Crew T. Dornier
P. Andrews
K. Hohman
J. Paul
J. Sardella

DAILY SITE REPORT

Job Name Pratt & Whitney

Date 12/4/89

Job Number 515153

Day Mon

Weather Conditions Clear Cold

Site Conditions Dry, Icy

Daily Work Description and Comments (tests, changes, claims, etc.): 0700 - Tailgate Safety Meeting

0715 - Continued removing electrical components

0730 - Continued flushing WFL 2 because the effluent is still greenish in color and has an odor to it.

0830 - Effluent from WFL 2 appears cleaner & free from odor. Switched steam over to WFL 3

1130 - Removal of electrical components 100% complete

1400 - 1500 - Filled WFL 1 & 2 with Citrikleen

1530 - Shut off steam to WFL 3

1530 - 1730 - Removed extra piping & cleaned inside of bldg

1730 - End of Shift

Schedule and Performance Status: Removal of all equipment inside bldg 100% complete
Will decon equipment, steam clean the pit and start wiping ceiling tomorrow

Additional-Extra Unanticipated Cost Factors: _____

Orders, Directives, Notices and Protests: _____

Meetings: _____

Visitors: _____

Tom Dornier



INTERNATIONAL
TECHNOLOGY
CORPORATION

Equipment

- 1- Pick up
- 1- Equip Trailer
- 1- 2yd loader
- 1- Cat 416 Loader
- 1- Fork Lift
- 1- Man Lift
- 1- Sissor Lift
- 2- Demo Saws
- 2- Roll Off Boxes
- 1- Steam Cleaner

Crew

T. Dormer
P. Andreas
K. Holman
J. Paul
J. Sardello

DAILY SITE REPORT

Job Name Pratt+Whitney

Date 12/15/89

Job Number 515153

Day Tue

Weather Conditions Clear, Cold

Site Conditions Dry

Daily Work Description and Comments (tests, changes, claims, etc.): 0700 - Tailgate Safety Meeting

0715 - Started filling WFL 3 with Citrikleen

0800 - Constructed a decon pad

0830 - Steam Cleaner delivered

0900 - Began Deconning heavy equipment

1000 - Began Steam Cleaning pit area

1100 - Took a sample of rinse water from pit area & Tested. Results still indicate Cyanide - will pump off water into portable tank supplied by CWTP

1300 - Finish Steam Cleaning Pit - Pumped off water - Vacuum water - Scraped out the sump - blew air on pit floor to dry.

1530 - Tried Shot blasting the pit floor. Shot Blaster will not work 1730 - End of Shift

Schedule and Performance Status: Start wiping ceiling Tomorrow

Additional-Extra Unanticipated Cost Factors: Seabird Trucks Cannot enter Emille - No approval from State yet. Extra charges for demurrage anticipated

Orders, Directives, Notices and Protests:

Meetings:

Visitors:

Tom Dormer



INTERNATIONAL
TECHNOLOGY
CORPORATION

Equipment: 1- Pick Up
1- Equip Trailer
1- 2 yd Loader
1- Cat 416 Backhoe
1- Fork Lift
1- Man Lift
1- Sissor Lift
2- Roll off Boxes

Crew: T. Dormer
P. Andreas
K. Nohman
J. Paul
J. Sardello

DAILY SITE REPORT

Job Name Pratt Whitney

Date 12/6/89

Job Number 515153

Day Wed

Weather Conditions Cloudy, Cold

Site Conditions Dry

Daily Work Description and Comments (tests, changes, claims, etc.): 0700 - Tailgate Safety Meeting
0730 - Crew begins ceiling wipe down. 2 men in ~~the~~ Sissor Lift starting
in South West Corner of building & working their way west. 2 men
in the man lift starting in the North ~~West~~ corner of the bldg and working
their way East.

1200 - 2/3 of ceiling complete

1230 - Continue wiping ceiling

1630 - Finish wiping ceiling

1730 - End of shift

Schedule and Performance Status: Wipe down of ceiling 100% complete. All
sampling will be done tomorrow

Additional-Extra Unanticipated Cost Factors: _____

Orders, Directives, Notices and Protests: _____

Meetings: _____

Visitors: _____

Tom Dormer



INTERNATIONAL
TECHNOLOGY
CORPORATION

DAILY SITE REPORT

Job Name Pratt & Whitney

Date 12/7/89

Job Number 515153

Day Thurs

Weather Conditions Clear, Cold

Site Conditions Dry

Daily Work Description and Comments (tests, changes, claims, etc.): 0700 - Tailgate Safety Meeting

0715 - Crew dismantling Poly wall.

0800 - Plumbing waste feed liner

1045 - Jack Hill from FAS arrives on site

1145 - Begin Flushing waste feed lines & sampling - 1230 Finish

1230 - Started Taking Chip samples from pit area

1430 - Scott Sager & Jack Hill begin wipe sampling ceiling

1630 - Wipe Sampling of ceiling complete

1730 - End of Shift

Schedule and Performance Status: _____

Additional-Extra Unanticipated Cost Factors: _____

Orders, Directives, Notices and Protests: _____

Meetings: _____

Visitors: Jack Hill - IT FAS



INTERNATIONAL
TECHNOLOGY
CORPORATION

DAILY SITE REPORT

Job Name Drath & Whitney

Date 12/8/89

Job Number 515153

Day Fri

Weather Conditions Cloudy, Cold

Site Conditions Dry

Daily Work Description and Comments (tests, changes, claims, etc.):

0700 - Crew Inventory Equipment & Materials
- Loading Trailer

0800 - Dismantled Step by Trailer. Plugged waste feed lines outside of bldg.

0930 - Front End loader taken off site

1000 - Man Lift & Sissor Lift taken off site

1230 - Truck from Freehold Cartage arrives on site - weighs & manifests
1 roll off box. Weighs 2nd roll off box. 2nd truck not
expected til late afternoon

* 2nd Truck expected on site between 1400-1500

Schedule and Performance Status: IT's Rental Equipment still to be picked up
- Office Trailer, 10 bottles of Oxygen & acetylene

Additional-Extra Unanticipated Cost Factors:

Orders, Directives, Notices and Protests:

Meetings:

Visitors:

James S. Sweeney

APPENDIX F

Photographs Showing Closure Activities



1. Incinerator train components dismantled and stored on-site in 1988. These included the waste heat boiler (back), the heat exchanger (front left), the flue piping and a portion of the air pollution control equipment.

June 21, 1989



2. Incinerator train components (center) and the dedicated enclosure (right) for these.

June 21, 1989



3. The combustion chamber and the associated above ground piping prior to start of closure.

June 23, 1989



4. The air pollution control equipment located inside the building in a pit.

June 23, 1989



5. The outside view of the building that houses the active wax/solvent storage tank and the air pollution control equipment. The combustion chamber is located on the side of the building and the exhaust stacks are located on top of the building.

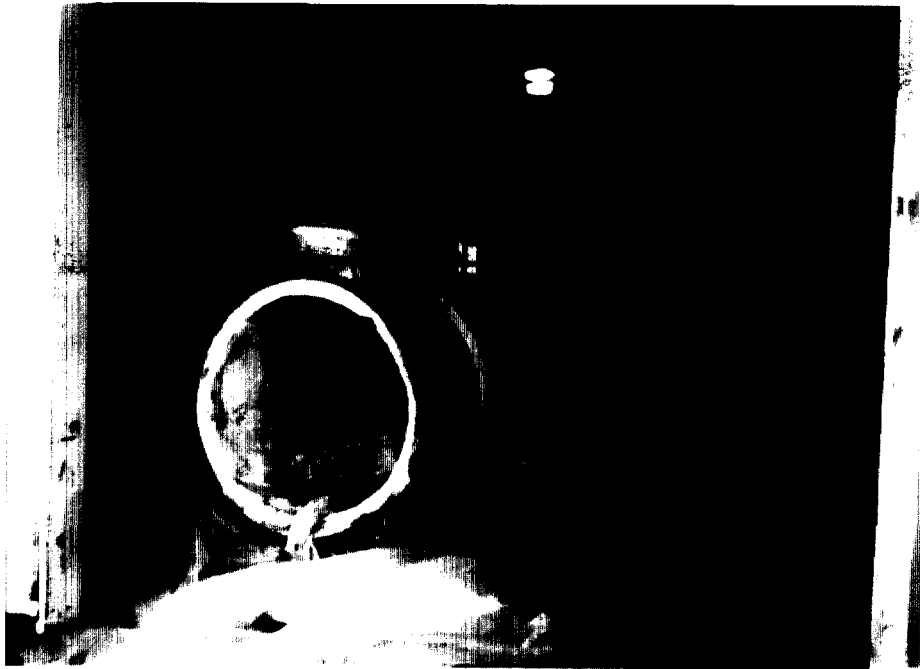
June 23, 1989



6. Ground is covered with plastic sheet prior to dismantling of outside piping for storing dismantled piping.

November 14, 1989

Originals in color.



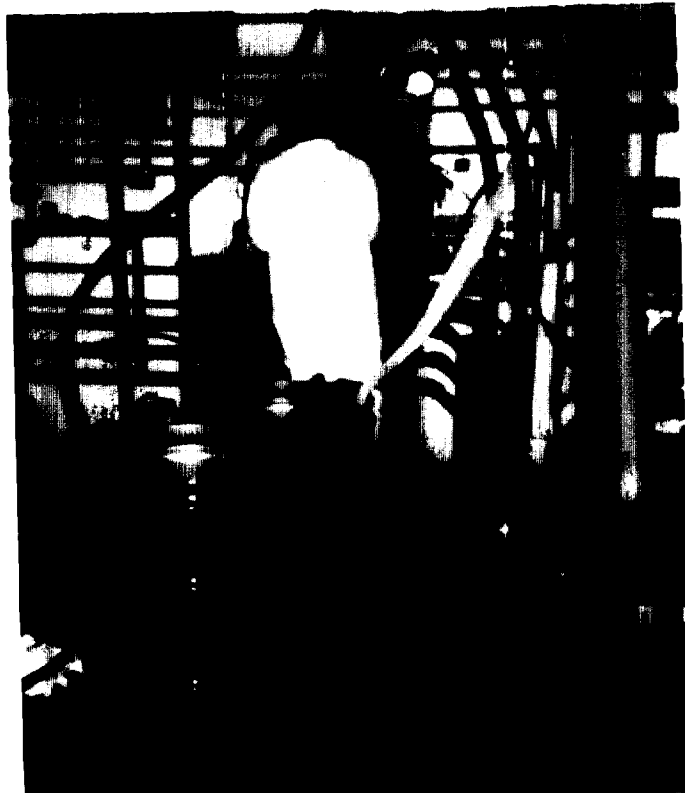
7. Insulation removal from the large heat exchanger.

November 14, 1989



8. Waste feed line decontamination set up.

November 15, 1989



9. Rinsate collection system for waste feed line decontamination set up.

November 15, 1989



10. Waste feed line flushing.

November 15, 1989

Originals in color.



11. Rinsate collection from waste feed line flushing operation.

November 15, 1989



12. Plastic barrier inside the building.

November 16, 1989



13. Preparation for dismantling the combustion chamber.

November 17, 1989



14. Removal of the large heat exchanger.

November 17, 1989

Originals in color.



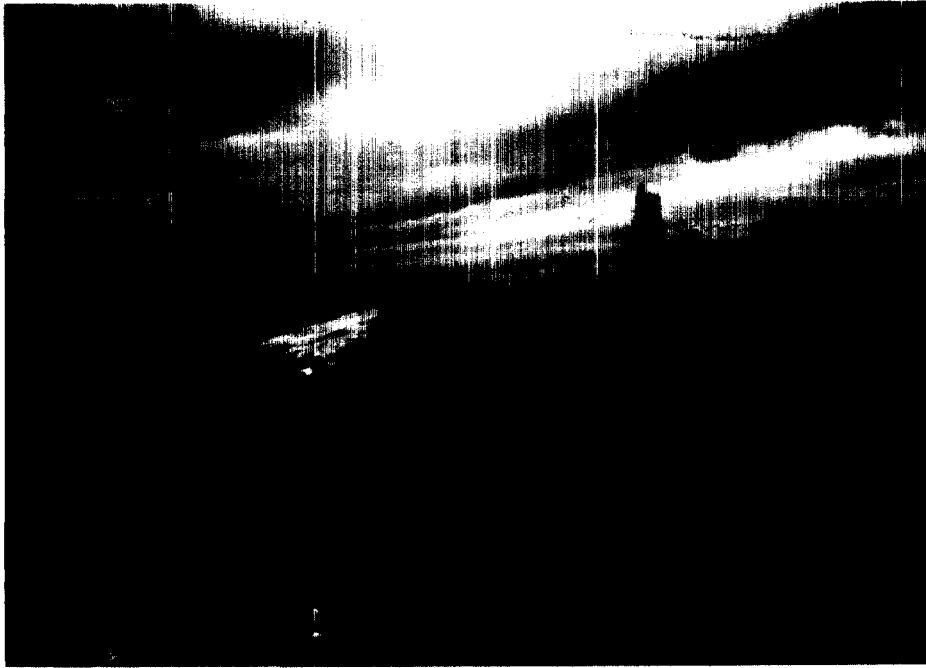
15. The combustion chamber is dismantled and lowered to ground.

November 17, 1989



16. Removal of refractory from combustion chamber.

November 20, 1989



17. Dismantled combustion chamber and heat exchanger.

November 22, 1989



18. Combustion chamber pad after removal of the combustion chamber.

November 22, 1989



19. Concrete pad prior to removal.

November 29, 1989



20. Concrete pad completely broken up.

November 29, 1989



21. Concrete pad completely removed.

November 29, 1989



22. Boarded, tarped and secured flat bed trailer containing large dismantled equipment pieces ready for transport.

December 2, 1989

Originals in color.



23. Final round of waste feed line flushing.

December 7, 1989



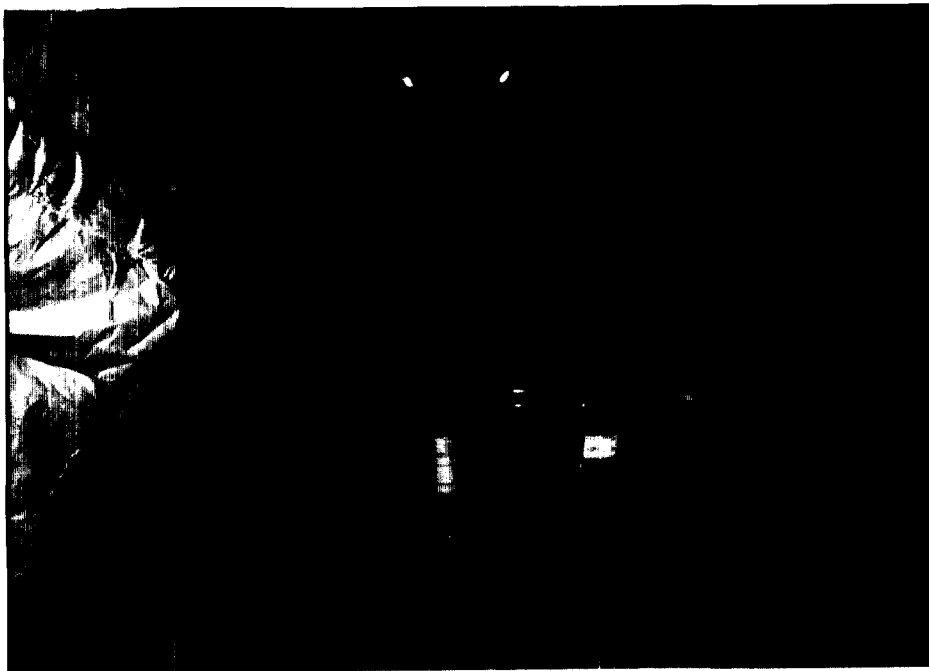
24. Final round of rinsate collection.

December 7, 1989



25. Waste feed line rinsate sampling.

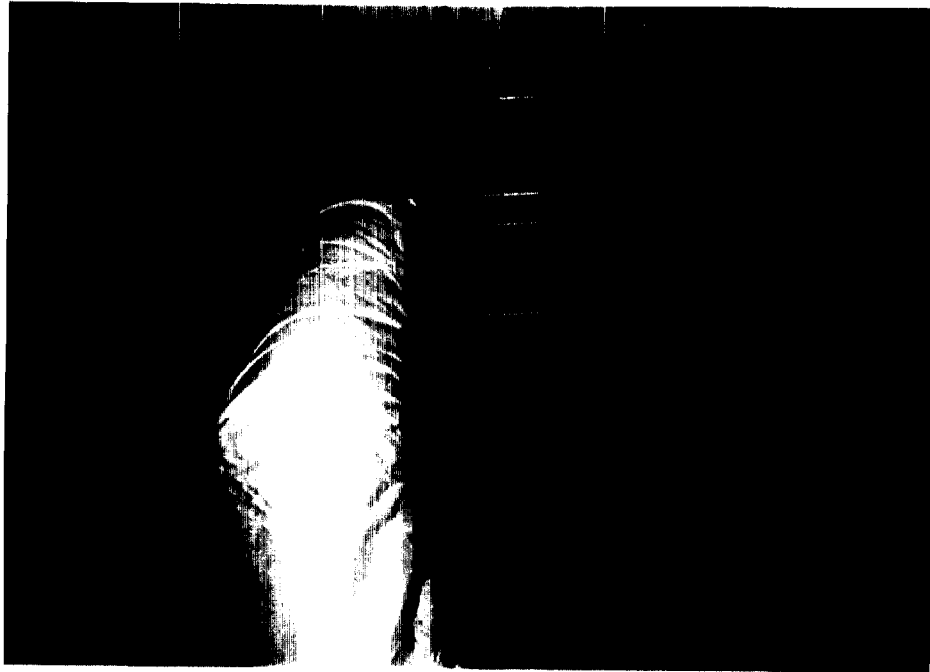
December 7, 1989



26. Waste feed line rinsate sampling.

December 7, 1989

Originals in color.



27. Ceiling wipe sampling.

December 7, 1989



28. Scrubber pit concrete chip sampling.

December 7, 1989



29. The last two roll-off containers containing small equipment pieces and debris ready for transportation.

December 8, 1989

APPENDIX G

Health and Safety Plan

HEALTH AND SAFETY PLAN

**PRATT AND WHITNEY
EAST HARTFORD, CONNECTICUT**

**Prepared for
Pratt and Whitney
600 Main Street
East Hartford, Connecticut 06108**

**Prepared by
IT Corporation
2790 Mossdale Blvd.
Monroeville, PA 15146**

November 8, 1989

Project No. 515153

**HEALTH AND SAFETY PLAN
PRATT & WHITNEY, EAST HARTFORD, CONNECTICUT**

A. INTRODUCTION

This plan describes the site Health and Safety procedures that will be implemented and followed by International Technology (IT) and subcontractor personnel during project activities at the Pratt and Whitney Facility in East Hartford, Connecticut.

The requirements of this plan shall apply to all personnel at the work site, including regulatory personnel. IT policy is to conduct all activities in a manner that protects the health of project personnel and the public.

All applicable chemical hazards previously identified have been used as guidelines for this health and safety plan. All activities shall be conducted so that the health and safety of the project personnel and the public are completely protected. The following program includes general safe work practices, personnel protection, personnel and equipment safety, medical surveillance, air quality monitoring and training requirements. The plan covers the safe work practices for physical, chemical and fire hazards. In addition, details for emergency response, first-aid capabilities and fire control are included.

The specification of this health and safety plan shall meet all requirements of both state and federal regulations, and IT procedures.

B. RESPONSIBILITIES

Health and Safety Representative

The Health and Safety representative will be responsible for technical development and coordination of the site health and safety program. Any discussions on matters relating to project health and safety with the Connecticut DEP, USEPA or OSHA will be the responsibility of the health and safety representative. In addition, this individual will provide the site project manager with details concerning the complete work specific programs.

Project Manager

The project manager shall be responsible for field implementation of the health and safety plan. This shall include communication of the site requirements to all personnel participating in the project. Additional communication may be required by the site supervisor to include consultation with the safety and health representative regarding appropriate changes to the health and safety plan. Tailgate safety meetings will be held daily to communicate pertinent health and safety information to all project personnel.

Team Members

All team members shall be responsible for understanding and complying with all site health and safety requirements. One member of the project group shall be assigned the responsibility of cleaning and maintaining the safety equipment and maintaining the decontamination area. All members of this group shall have been provided formal classroom training regarding the hazards and protection involved with this project.

C. HAZARD ASSESSMENT

In dealing with the operations involved in a potentially hazardous location, a variety of safety hazards may exist. All personnel working within the exclusion zone will be familiar with these hazards. These safety precautions will be reiterated during the daily Tailgate Safety meetings.

C.1 Chemical Hazards

The potential chemical hazards involved in this project are airborne concentrations of organic hydrocarbons and heavy metals. Organic vapors may pose a flammability hazard as well as a health hazard.

High vapor concentration of the materials listed in the table in Section C.2 are potentially irritating to the eyes and the respiratory tract, may cause headaches and dizziness, are anesthetic, may cause unconsciousness, and may have other central nervous system effects. Prolonged or repeated liquid contact with the skin will dry and defat the skin leading to dermatitis or irritation.

Exposure to dust containing heavy metals may cause effects such as acute poisoning, cumulative poisoning, anemia, and cancers. Such effects are normally associated with long term exposures.

Sodium hydroxide will be used for decontamination. Sodium hydroxide is extremely corrosive to the skin and eyes.

C.2 Exposure Standards

Threshold Limit Values (TLVs) refer to airborne concentration of substances which represent conditions that nearly all employees may be repeatedly exposed to day after day without adverse effect. These threshold limits are prescribed by the American Conference of Governmental Industrial Hygienist (ACGIH). They are based upon the best available information from industrial experience and animal or human studies. Because of the wide variation in individual susceptibility, a small percentage of workers may experience discomfort from some substances at

concentrations below the recommended values. It has been policy to use these guidelines for good hygienic practices; however, whenever applicable, stricter guidelines may be utilized.

Currently, exposure guidelines to pesticides and other chemical substances are regulated by the Federal Occupational Safety and Health Administration (OSHA). These exposures are based upon the Time-Weighted Average (TWA) concentration for a normal 8-hour workday and a 40-hour work week. Several chemical substances have short-term exposure limits or ceiling values which allow a maximum concentration to which workers can be exposed continuously for a short period of time without suffering from (1) irritation, (2) chronic or irreversible tissue damage, (3) narcosis of a sufficient degree to result in accidental injury, impair self-rescue, or substantially reduce work efficiency.

The short-term exposure limit (STEL) is defined by the American Conference of Governmental Industrial Hygienists (ACGIH) and Federal OSHA as a 15-minute time-weighted-average exposure which should not be exceeded within a two hour time period during a workday even if the 8-hour time weighted average is within current limits. Federal OSHA requires that a 15 minute "ceiling" concentration never be exceeded for that chemical constituent. This notation appears as the letter "C" after the chemical name.

Under certain chemical substance listings, there may appear a "skin" notation. This refers to the potential contribution to the overall exposure by the cutaneous route including mucous membranes and eye, either airborne or by direct contact. Little quantitative data is available describing absorption as a function of the concentration to which the skin is exposed. Biological monitoring may be considered to determine the relative contribution of dermal exposure to the total dose.

The ACGIH and Federal OSHA have recognized that certain chemical substances may have the potential to be a carcinogen in humans from epidemiological studies, toxicology studies and, to a lesser extent, case histories. Because of the long latency period for many carcinogens, it is often impossible to base timely risk management decisions on the results of such information. Two categories of carcinogens are designated based upon the most current literature and information. These include confirmed human carcinogens and suspected human carcinogens. These chemical categories are recognized to have cancer potential rather than confirmatory proof is based on either 1) limited epidemiologic evidence, experience of clinical reports of single assess, or 2) demonstration of carcinogens in one or more animal species by appropriate methods. The worker potentially exposed to a known human carcinogen must be properly equipped to insure virtually no contact with the chemical constituents. In the case of a suspected human carcinogen, worker exposure by all routes must be carefully controlled by the use of personal and respiratory protection, and administrative or engineering controls.

The following table represents the guidelines currently established by federal OSHA for the materials listed as possible contaminants.

<u>CHEMICAL</u>	<u>OSHA PEL (8 HOUR)</u>	<u>OSHA STEL</u>	<u>OSHA CEILING</u>
METALS			
Arsenic	10 ug/m ³	--	--
Barium	0.5 ug/m ³	--	--
Cadmium	0.2 mg/m ³	--	0.6 mg/m ³
Chromium	0.5 mg/m ³	--	--
Copper	1 mg/m ³	--	--
Lead	50 ug/m ³	--	--
Mercury	--	--	1 mg/10 m ³
Selenium	0.2 mg/m ³	--	--
Silver	0.01 mg/m ³	--	--
ORGANICS			
Carbon Tetrachloride	2 ppm	--	--
1,1 Dichloroethylene	200 ppm*	--	--
Methylene Chloride	500 ppm	--	1,000 ppm
Tetrachloroethylene	50 ppm*	200 ppm*	--
1,1,1 Trichloroethane	10 ppm	--	--
Trichloroethylene	100 ppm	200 ppm	--

* Hour TWA limit recommended by the American Conference of Governmental Industrial Hygienists (ACGIH).

D. AIR MONITORING

Air monitoring for organics and/or metals will be conducted as necessary. NIOSH approved sampling and analytical methods will be used; samples will be analyzed at a laboratory accredited by the American Industrial Hygiene Association (AIHA). Results of personal exposure samples will be used to determine ongoing monitoring frequency.

E. GENERAL WORK PRACTICES

Protective clothing and respiratory protective equipment will be used for various stages of the operation as needed. The level of protection will be specified in the following section depending upon the degree of hazard. (see section 12)

All work being performed at this facility will use the "buddy" system. Prior to beginning the work each day, buddies will be assigned. These team members will keep in visual contact with each other at all times. One member will be responsible to ensure the safety of the other team members. These team members will be aware of any slip, trip, and all lifting hazards along with any potential exposure to chemical substances, heat stress, and general hazards within the work areas. All information regarding work to be performed, emergency procedures, and health and safety hazards will be reviewed before the work begins during

a daily Tailgate Safety meeting. No work will be performed without completing these procedures and appropriate documentation.

All operators of trucks and heavy equipment used on site will be properly trained in the inspection and operation of such equipment. The site supervisor will be responsible to check the proficiency of the operator. One standby person will provide guidance to the equipment operator using either two-way radios or universal hand signals. Perimeter barricades will be placed around the particular equipment used in a fixed location. Audio and/or visual backup alarms will be utilized on all heavy equipment on site.

Only authorized personnel will be permitted in the work area. These authorized individuals must have successfully completed a medical exam and have been properly trained in the use of respiratory protective equipment and specific health and safety hazards. All visitors shall check with the IT representatives in the administrative office, and with the on-site security guard.

Personnel will be prohibited from being transported by any other means than those prescribed for movement of personnel. When trucks or other heavy equipment enters or leaves the site, flagman will direct traffic. This should minimize the possibility of accidents and traffic jams.

Fire extinguishers will be on site. In the event of an emergency, these materials will be ready for the worker's safety and protection. Any deviation from this site safety requirement must be discussed with the Regional Health and Safety Manager.

Smoking will not be permitted on the premises except in the support area or other specified location. Any employee not willing to comply with this procedure will be dismissed from the project immediately.

At least one qualified person competent in both American Red Cross first-aid techniques and cardiopulmonary resuscitation (CPR) will be part of the team performing a specified task. A complete first-aid kit will be readily available on site. If a serious injury occurs, the local hospital and ambulance will be summoned to evacuate the injured or ill person.

No electrical equipment will be permitted in areas where there exist a flammable atmosphere. All static ignition sources will be identified and eliminated by the use of bonding and grounding techniques.

Material Safety Data Sheets (MSDS) will be obtained for every chemical product used on site. This information will be made readily available to all employees upon request and stored in a central location. MSDS or applicable information will be available with regard to materials used in the soil collection and drilling process. All containers of any chemical products will be properly labeled to comply with the Federal OSHA Hazard Communication Standard (29 CFR 1910.1200).

F. HYDROBLASTING SAFETY

Hydroblasting involves a stream of water at 2000 psi, therefore specific safety requirements apply:

- o The operator shall be thoroughly instructed in handling and operating the gun and nozzle and all accessories prior to use.
- o The operator shall wear goggles, faceshield and boots with metatarsal covers.
- o Prior to cleaning piping or vessels, all connecting lines shall be blinded or valved and locked to prevent entry of contaminants.
- o Barricades shall be erected to enclose the work area, and signs shall be posted to warn of high pressure equipment.
- o All components of the hydroblast system shall have a burst pressure at least 4 times the operating pressure.
- o A hose safety shroud shall be used on hoses if operating pressure exceeds 2000 psi.
- o The pressure control shall be a "deadman" type to safely reduce the nozzle discharge pressure when control is released.
- o The pressure discharge gauge shall be clearly visible at all times.
- o A pressure relief device must be installed on the pump and set at 110% of the maximum working pressure of the system.
- o A strainer or filter must be installed on the water supply system to prevent clogging.

G. HEAVY EQUIPMENT OPERATION

- o Only experienced, demonstrably proficient equipment operators will be used to operate such heavy equipment as backhoes, front-end loaders, cranes, etc. Where certification or licensing requirements exist, such personnel shall possess appropriate certification and/or licensing for operating specified heavy equipment.
- o While operating heavy equipment in the work area, the equipment operator shall maintain communication with a designated signalman through either direct voice contact or approved standard hand signals. In addition, all site personnel in the immediate work area shall be made aware of the equipment's operation.
- o All equipment, such as pipe, rubber, etc., shall be kept out of traffic lanes and access ways. Equipment shall be stored so as not to endanger personnel at any time.
- o A flagman with roadwork vest, signs, cones, and high-level warning signs shall be provided when it is necessary to control normal vehicular traffic due to vehicles entering or leaving the site.

H. FIRE SAFETY

- o Hot work shall not be conducted unless all requirements of ITC PRO 9571.1 (Welding, Cutting, and Other Hot Work in Hazardous Locations) have been met.
- o Equipment on-site shall be bonded and grounded, spark-proof, and explosion resisted, as appropriate. Particular attention to bonding/grounding shall be made during transfer of flammable/combustible liquids into vacuum trucks and when ventilation equipment is utilized.
- o A fire extinguisher with a minimum rating of 10B:C shall be strategically located in the area of active work.
- o No smoking shall be allowed in the work area.

I. REGULATED AREAS

The work area will include three separate zones: an exclusion ("hot") zone, a contamination reduction zone, and a support zone.

The Exclusion Zone will consist of the entire area of suspected contamination during operations. All employees will use proper personnel protective equipment when working in those areas. The exclusion zone will be a defined area where there is a possible respiratory and/or contact health hazard. In most instances this area will be the incinerator building, with the entrance used to delineate the beginning of the zone. The location of exclusion zone will be identified by cones or other appropriate means.

A Contamination Reduction Zone will be established. Decontamination will be performed in the contamination reduction zone. All personnel entering or leaving the exclusion zone will pass through this area in order to prevent any cross-contamination and for the purpose of accountability. Tools and any equipment or machinery will be decontaminated in a specific location. The decontamination of all personnel will be performed on site adjacent to the exclusion zone. Personal protective outer garments and respiratory protection will be removed in the contamination reduction zone and properly labelled. This zone will be outside the incinerator building.

The Support Zone will consist of an area outside the contamination reduction zone. The support zone will be located to prevent employees from being exposed to any organic vapors, dust or fiber levels above environmental levels. Eating, drinking, or smoking will be permitted in the support area only after washing both face and hands. This zone will be outside the incinerator building, away from the Contamination Reduction zone.

J. MEDICAL SURVEILLANCE

All personnel on-site will have successfully completed a preplacement or periodic (annual) physical examination. This should comply with ITC PRO 9410.1. This examination has been designed to comply with all regulatory requirements.

Pre-employment, Periodic Surveillance, Exit Physicals

Tests that are performed for employment physicals include the following listed:

- o Medical and occupation history and past gastrointestinal, hematologic, renal cardiovascular, reproductive, immunological and neurologic problems. Along with a history of respiratory disease and personal smoking habits.
- o Blood pressure measurements.
- o Complete blood count and differential to include hemoglobin and hematocrit determinations, red cell indices, and smear of peripheral morphology.

- o Blood urea nitrogen and serum creatinine
- o Urinalysis (dipstick and microscopic examination)
- o Audiometric examination
- o Pulmonary function test ($FEV_{1.0}$ and FVC)
- o SMA-25 or equivalent liver function test
- o EKG for employees over 45 years old or when other complications indicate the necessity
- o Drug and alcohol screen

IT Health and Safety Personnel maintain all employee medical records in the Regional offices. These records are continually reviewed and updated. IT will maintain all medical records for a period of 30 years, and a copy of these records will be made available to any employee for either review or copying upon request. In order to obtain a copy of the medical record, a written release order must be completed by the employee and submitted to the Health and Safety representative.

The medical surveillance provided to the employees includes a judgement by the medical examiner of the ability of the employee to use either positive or negative pressure respiratory equipment. Any employee found to have medical condition which could directly or indirectly be aggravated by exposure to these chemical substances or by the use of respiratory equipment will not be employed for the project.

All part-time employees and all non project personnel visiting the site will be restricted unless evidence is presented that a medical examination covering all the above mentioned tests have been conducted with satisfactory results.

K. TRAINING

All employees assigned to the project will have completed a training program which includes, as a minimum, the following:

- o Basic Safety Training - This course stresses the fundamentals of safety including the causes and prevention of slip, trip, and fall hazards, confined space entry, heat and/or cost stress illness and prevention.

- o Hazards and Protection - This course deals with the identification and recognition of safe work practices with toxic materials. The use and limitation of applicable protective clothing, respirators, and decontamination procedures. Respiratory fit-test is provided to each employee attending the course.
- o First Aid and CPR - It is necessary for some employees in this project group to have completed both first aid and CPR training.
- o Site Specific Safety Training - This course covers the mandates of the project health and safety plan. In particular, this stresses emergency response procedures and the various health hazards.
- o Waste Operation Training - This course is a hands on session with personal protective equipment, drum handling, sampling and decontamination procedures.

Any new employee who has not completed 40 hours of formal training class will receive this training before beginning to work on the project. This will apply to all subcontractors working for IT Corporation.

Tailgate Safety Meetings will be conducted at the beginning of each workshift, or whenever new employees arrive on the jobsite. The health and safety considerations for the particular day's activities will be reviewed, and the protective equipment and other materials necessary to perform the work will be outlined.

L. PERSONAL PROTECTION

LEVELS OF PROTECTION

Specific levels of protection will be used to safeguard IT employees on the job from potential hazards. Three distinct levels of protection may be required for this project. The final determination for IT personnel and subcontractors of any required level of protection will be based upon the hazards and current conditions of the worksite. The only person who may make this determination is the Health and Safety Manager. The situations requiring specific levels of protection are described in the following sections.

LEVEL B PROTECTION

Level B protection will be required when airborne concentrations exceed two times the AGGIH Threshold Limit Value (TLV) or OSHA PEL. Appreciable air contamination may occur from heavily contaminated soil excavation, requiring this level of protection. Work in areas where concentrations are unknown or may change suddenly also require Level B protection.

The following equipment will be used for Level B protection:

- o Full face air supply respirator (SCBA or Air Line) which is NIOSH/MSHA approved.
- o Hooded, chemical resistant outer suit. Tyvek or polytyvek inner suit.
- o Gloves (outer) - chemical resistant (Nitrile)
- o Gloves (inner) - chemical resistant (Latex)
- o Boots - chemical resistant Neoprene with steel toes with latex booties.
- o Hard hat
- o Hearing protection (if necessary)

LEVEL C PROTECTION

Level C protection will be required when the airborne concentration of suspected contaminants are known to be at or slightly above the ACGIH Threshold Limit Value (TLV) or the OSHA PEL. This level of protection will be utilized during most of the demolition, and when decontaminating tools and equipment.

The following equipment will be used for Level C protection:

- o Full face, air purifying respirators with organic vapor cartridge in combination with high efficiency particulate filter (HEPA) which are NIOSH/MSHA approved. Half face respirators will be utilized if accompanied by chemical splash goggles and specified by the Regional Health and Safety Manager.
- o Hooded, chemical resistant Polyethylene coated TYVEK. Saranex if possibility of wetting exists.
- o Gloves - (Outer) - chemical resistant Nitrile
- o Gloves - (Inner) - chemical resistant (latex).
- o Boots - (Outer) - chemical resistant Neoprene with steel toes or double latex booties where there exist only surface contamination over steel toed shoes.
- o Hard hat
- o Hearing protection (if necessary)

LEVEL D PROTECTION

The minimal level of protection that will be required of IT personnel and subcontractors at the site will be Level D. This level will be utilized in the support zone and other areas remote from the exclusion zone.

The following equipment will be used for Level D protection:

- o Coveralls
- o Boots/shoes - safety or chemical protection (latex booties) with steel toes.
- o Safety glasses or goggles
- o Hard hat
- o Chemical resistant nitrile or PVC protective gloves with surgical latex undergloves.

M. RESPIRATORY PROTECTIVE EQUIPMENT AND USE PROTOCOL

A comprehensive respiratory protection program has been established by IT Corporation. This program will be required in all locations where use of such equipment could lessen the potential for adverse health affects to any employee. The type of respiratory equipment will be continuously reevaluated based upon the current level of exposure. The only person who will be able to modify the level of respiratory protection is the regional Health and Safety Manager.

As part of the respiratory training program, each employee will have been instructed in the following elements:

- o Nature of the respiratory hazard on the work site and the appraisal of what may happen if the respiratory protection is not utilized.
- o Use and proper fitting of the respirator.
- o Cleaning, disinfecting, inspection, maintenance, and storage of the respirator.
- o Proper selection, capabilities, and respirator limitations.

The respiratory protection and training program will be conducted, documented, and recorded by the Health and Safety representative.

Routinely used respiratory equipment will be inspected, cleaned, and disinfected daily to help assure proper hygienic practices. A safety equipment custodian shall maintain the respirators. An inspection of these breathing devices will include the following:

- o Examination of the head straps for breaks, loss of elasticity, broken or malfunctioning buckles, and other attachments.
- o Examination of the facepiece for excessive dirt, cracks, tears, distortion, holes, or inflexibility.
- o Examination of the exhalation and inhalation valves for any foreign material, cracks, tears, distortion, in the valve. Additional checks will be made to inspect for proper insertion, defective valve covers, or improper installation.
- o Examination of air purifying elements for incorrect cartridge, expired shelf-life of the cartridge, cracks or dents in the cartridge or cartridge holder.
- o Examination of proper insertion of the cartridges into the facepiece and a check of the gaskets inside the cartridge holder.
- o Examination of air cylinders for adequate air volume. Only grade D air will be utilized for breathing air.

When Level C protection is required, respiratory cartridges will be changed daily. This requirement may be modified by the Health and Safety representative depending upon the exposure level of the air contaminants.

The safety technician will maintain the respiratory equipment and be knowledgeable in the cleaning and disinfection process. Each individual will scrub boots and gloves using detergent in warm water using a brush and then thoroughly rinsing with clear water. Finally, the respirators will be dried in a clean location after each day's use. If broken or malfunctioning parts are found during the cleaning process, these parts will be replaced or new respiratory equipment will be issued to the user.

The respiratory equipment will be stored in an area protected from any mechanical damage. These devices will also be stored in a location that provides protection against dust, heat, excessive moisture, or damage by chemical contact. The storage area for the respirators should be in a readily accessible location.

N. DECONTAMINATION PROCEDURES

PERSONAL DECONTAMINATION

A decontamination zone will be established at the perimeter of the exclusion zone. A step off area will be designated just outside the contamination zone. All employees entering from the exclusion zone will pass through the decontamination area to remove their respirators and/or protective clothing. The employees may then enter the break area after washing their face and hands. Employees must be screened by the "decon person" to ensure compliance with this procedure.

At the end of each work period (before eating, drinking smoking, or leaving the site) each person who has entered the construction area will decontaminate by passing through the contamination reduction line. Each of the following stations will be entered and used as appropriate.

- o Equipment/Tool Drop Station
- o Boot Wash - soiled boots will be washed in a tub containing a detergent solution.
- o Boot Wash - personnel will step into a tub containing rinse water after washing boots.
- o Glove Wash - intact gloves will be wiped clean over a glove was bucket containing detergent and water.
- o Glove Rinse - washed gloves will be rinsed with water or wiped with a water wet towel.
- o Used coveralls will be dropped into a bag-lined garbage can for disposal at an approved facility.
- o Spent disposable respiratory or cartridges will be dropped into a bag-line garbage can.
- o Clean boots will be placed under the work table at the clean end of the corridor.
- o Clean respirators, hard hats, goggles and face shields will be placed on the work table at the clean end of the corridor.
- o Personnel may then exit the site through the access control point.

Soiled boots, hard hats, respirators, and other equipment will be inspected daily, washed and scrubbed in a detergent/water solution. After cleaning, equipment will be rinsed thoroughly in water and allowed to dry on a clean surface.

If there is a rip or tear in the employee's protective clothing, that individual will remove the torn garment in the decontamination area and new protective clothing will be issued in order for the employee to return back to work. The same procedure will apply to defective respiratory equipment.

EQUIPMENT DECONTAMINATION

Any equipment used inside the exclusion zone will be considered contaminated and must be cleaned before leaving the work site. Decontamination of all large equipment including generators, backhoes, and other equipment will be performed on site (prior to personnel decontamination). Verification that all equipment has been properly decontaminated will be the responsibility of the site project manager. Proper decontamination may include wipe samples of the surfaces of all equipment. All contaminated solvents generated from the cleaning operation will be collected and containerized for disposal.

SITE SECURITY

Controlled access to the regulated area will be established. Only authorized personnel shall be permitted to enter the regulated area. No one will enter the exclusion or the contamination reduction zones without appropriate authorization. Excavation and sampling operations will be suspended until unauthorized individuals have left the site.

- o All persons entering the regulated area will be equipped with appropriate personnel protective devices.
- o All persons entering the regulated area must be familiar with and abide by the health and safety plan.
- o All persons must have completed the necessary 40-hours training for uncontrolled hazardous waste site operations and emergency response.
- o All employees will sign in and out daily while performing duties on-site. The record of all site entry personnel shall be monitored with the site security officer.

O. HEAT STRESS

Remediation work in protective clothing may result in heat related disorders. One or more of the following control measures can be used to help control heat stress:

- o Provision of adequate liquids to replace lost body fluids. Employees must replace water and salt lost from sweating. Employees must be encouraged to drink more than the amount required to satisfy thirst. Thirst satisfaction is not an accurate indicator of adequate salt and fluid replacement.

- o Replacement fluids can be a 0.1 percent salt water solution, commercial mixes such as Gatorade or other product, or a combination of these with fresh water. Employees should be encouraged to salt their foods more heavily.
- o Establishment of a work regimen that will provide adequate rest periods for cooling down. This may require additional shifts for workers.
- o Cooling devices such as vortex tubes or cooling vests and be worn beneath protective garments.
- o All breaks are to be taken in a cool rest area (77 degrees fahrenheit is best).
- o All employees shall be informed of the importance of adequate rest, acclimation, and proper diet in the prevention of heat stress.

During periods of high temperature and/or humidity, the site supervisor or the Health and Safety representative will continually observe the workers for symptoms of heat stress especially in areas where protective clothing is being worn. If the body's physiological process to maintain a normal body temperature fails, or are overburden due to excessive heat exposure, a number of physical reactions can occur ranging from mild symptoms such a fatigue, irritability, anxiety, and decreases in mental concentration. Heat related problems are presented below:

Heat Rash - This caused by continual exposure to heat and humid air, and aggravated by chaffing clothes. Heat rash decreases a person's ability to tolerate heat as well as becoming an irritating nuisance.

Heat Cramps - This is caused by profuse perspiration with inadequate water intake and chemical electrolyte imbalance. This results in muscle spasm and pain in the extremities and abdomen.

Heat Exhaustion - Increased stress on various organs to meet increasing demands to cool the body will result in signs and symptoms including shallow breathing; pale, cool, moist skin; profuse sweating; dizziness and lassitude.

Heat Stroke - This is the most severe form of heat stress which must be treated immediately by cooling the body or death may result. Signs and symptoms include red, hot, dry skin; no perspiration; nausea; dizziness and confusion; strong, rapid pulse; and coma.

P. EMERGENCY RESPONSE PLAN

Emergency response procedures will be developed for extraordinary conditions that may occur at the work site and will be covered during the Tailgate Safety meeting.

GENERAL RESPONSE CONSIDERATIONS

Emergencies must be dealt with in a manner to minimize the health and safety risk to all site personnel. Work activities will be conducted in groups of at least two workers (buddy system) to provide continuous monitoring in the event of an emergency. Emergency signals will be developed to include a continuous 30-second blast of a siren or horn. Other signals will be reviewed such as those developed for restricted air flow or breathing difficulty. A stand-by person will be dressed and ready to assist in the event of an emergency.

FIRE/EXPLOSION

Upon notification of a fire or explosion on-site, the designated emergency signal shall be sounded and all site personnel assembled at the decontamination line. The fire department shall be alerted and all personnel moved to a safe distance from the involved area.

PERSONAL PROTECTIVE EQUIPMENT FAILURE

If any site worker experiences a failure or alteration of protection factor, that person and his/her buddy shall immediately leave the Exclusion Zone. Re-entry shall not be permitted until the equipment has been repaired or replaced.

OTHER EQUIPMENT FAILURE

If any other equipment on-site fails to operator properly, the Project Team Leader and site Safety Officer shall be notified and then determine the affect of this failure on continuing operations on site. If the failure affects the safety of personnel or prevents completion of the Work Plan tasks, all personnel shall leave the Exclusion Zone until the situation is evaluated and appropriate actions taken.

In all situations, when an on site emergency results in evacuation of the Exclusion Zone, personnel shall not re-enter until:

- 1) The conditions resulting in the emergency have been corrected.
- 2) The hazards have been reassessed.
- 3) The site safety plan has been reviewed.
- 4) Site personnel have been briefed on any changes in the Site Safety Plan.

RESPONSIBILITIES

The site project manager will have the responsibility for directing the response activity in the event of an emergency. The responsibilities are described below:

- o Assess the emergency situation and notify site security personnel.
- o Determine the required response measures by informing the site supervisor by radio communication.
- o Notify the appropriate response teams of the specific action that will be taken upon request.
- o Determine and coordinate the on-site personnel actions for the particular emergency situation.
- o Contact and coordinate with any governmental or regulatory agency.
- o Immediately complete the Supervisor Injury Report form upon occurrence of the accident or incident and list on the OSHA Occupational Injury/Illness form 200 if appropriate.

PUBLIC RESPONSE AGENCIES

Before the start of the construction and decontamination operations, the Project Manager will develop a list of public response agencies which may be contacted depending on the nature of the emergency. This list of contact agencies will include the name, address, and telephone number of the following:

- | | |
|-----------------------|----------------|
| o Police Department | 528-4401 |
| o Fire Department | 528-4173 |
| o Emergency Ambulance | 911 |
| o Poison Control | (212) 764-7667 |
| o Hartford Hospital | 524-2525 |

In the event of an emergency, an agency may assume authority for the emergency response. Personnel should be instructed to assist the agency in charge. The appropriate contacts include, but not limited to, the following:

o U.S. EPA	(617) 573-9644
o Connecticut DEP	566-2264
o U.S. Coast Guard	(800) 424-8802
o National Response Center	(800) 368-5888
o National Poison Control Center	(404) 588-4400

The list of contacts shall be posted at several prominent locations.

ACCIDENTS AND NONROUTINE EVENTS

The types of emergencies outlined below are not all inclusive and the corresponding response procedures will not be considered inflexible. Every accident presents a unique event that must be dealt with by key trained personnel. The prime considerations are to provide the appropriate initial response to assist those in jeopardy without placing additional personnel at unnecessary risk.

SPILL PREVENTION CONTROL AND CLEANUP COUNTER MEASURE PLAN (SPCC)

Responsible Authority: Site Superintendent
Reporting Authority: OSC

On Site Equipment List Includes

- o Sorbent Pads
- o Sorbent Material
- o Over-Packs
- o HNU Meters
- o Fire Extinguishers
- o Air Horn
- o First Aid Kit
- o Rolls of Polyethylene sheeting
- o Brooms and Shovels
- o Self Contained Breathing Apparatus
- o Protective Clothing
- o Diaphragm Pump
- o Granular Lime

IT's basic approach to any spill or release is:

Control
Contain
Communicate
Clean-Up

In the event of a spill the drum staging area, the spilled material will have already been categorized, therefore, the nature of the material will be known. Based upon this knowledge the appropriate sorbent and/or neutralization material will be applied immediately to control and contain the material. The site superintendent will be notified who will then direct the clean-up operations and perform the required notifications.

If a spill occurs in the "Haz-Cat" area prior to characterization, the on-scene field chemist will determine the appropriate control measures to be initiated immediately. The site superintendent will be notified who will then direct the required clean-up activity.

IT's work plan for this project has been developed incorporating features to prevent and contain the release of any hazardous materials.

VAPOR EMISSIONS

In the event of significant vapor emission, all work shall stop immediately. The source of the emission shall be located and controlled as quickly as possible. State, local and USEPA authorities shall be notified if vapor levels are significant or if vapors leave the site. If a fire or explosion hazard exists, local authorities will be notified.

WORKER INJURY

If a person working in an area is physically injured, American Red Cross first-aid procedures will be followed. Depending upon the severity of the injury or illness, emergency medical response may be obtained accordingly. If the person can be moved, that person will be taken to a location from the work area where emergency first aid treatment can be administered. The local emergency medical facility should be contacted along with an ambulance.

The site project manager will prepare a written report detailing the particular accident, its causes, and consequences within one day from the time of the accident.

PERSONNEL INJURY IN THE EXCLUSION ZONE

Upon notification of an injury in the Exclusion Zone, the designated emergency signal shall be sounded. All site personnel shall assemble at the decontamination line. The rescue team will enter the Exclusion Zone (if required) to remove the injured person to the hotline. The Site Safety Officer and Project Team Leader should evaluate the nature of the injury, and the affected person should be decontaminated to the extent possible prior to the movement to the Support Zone. The on-site EMT/or First Aider shall initiate the appropriate first aid, and contact should be made for an ambulance with the designated medical facility (if

required). No persons shall re-enter the Exclusion Zone until the cause of the injury or symptoms is determined.

PERSONNEL INJURY IN THE SUPPORT ZONE

Upon notification of an injury in the Support Zone, the Project Team Leader and Site Safety Officer will assess the nature of the injury. If the cause of the injury or loss of the injured person does not affect the performance of site personnel, operations may continue, with the on-site EMT/or First Aider initiating the appropriate first aid and necessary follow-up as state above. If the injury increases the risk to others, the designated emergency signal shall be sounded and all site personnel shall move to the decontamination line for further instructions. Activities on-site will stop until the added risk is removed or minimized.

If the injury to the worker is of chemical nature, the following first-aid procedures will be instituted as quickly as possible:

- o Eye Exposure - If contaminated material gets into the eyes, the eyes will be flushed immediately at the eyewash station using copious amounts of water while lifting up the lower and upper eyelids.
- o Skin Exposure - If contaminated sludge or corrosive liquid material gets on the skin, the affected area will be washed with soap or mild detergent.
- o Inhalation - If an individual inhales a volume of toxic or corrosive vapors, the employee will be removed to fresh air at once. If breathing has stopped, artificial respiration will be performed on the affected individual until medical attention can arrive on scene and transport the patient to the nearest medial facility.
- o Ingestion - In the event a person ingests a toxic liquid or solid material, medical attention shall be obtained at once.

Q. RECORDKEEPING

All exposure monitoring conducted during the project will be recorded along with the description of the field activities. The recorded results and the methodologies will be kept for a period of at least 30 years.

Records of completed formal health and safety training for any project employee are available upon request. Any health and safety training performed on site or prior to beginning the project will be documented accordingly.

All Tailgate Safety Meetings (daily) will be kept in the form of a log book for review by the Health and Safety Coordinator.

Tailgate Safety meetings are conducted prior to the beginning of every workshift in order to discuss the work activity, potential exposure to various chemicals, physical hazards, type of protective clothing, and miscellaneous items of interest.

All logs and reports required by either local, state, and federal regulations will be kept and submitted accordingly.

APPENDIX H
Safety Meeting Logs

TAIRGATES SAFETY MEETING

Date: 10/1/81 Facility: Fork
Time: 1:30 Job Number: S1515
City: MACTON
State: CT
Project: BRIDGE
Contract: 10/1/81

SAFETY TOPICS PRESENTED

Protective Clothing/Equipment: Tyvek, Rubber Gloves, Hard Hat, Full face respirator

Health Hazards: Safety glasses, ear plugs

Chemical Hazards: Cyanide, Hydro Carbons, water

Physical Hazards: Slip (wet surfaces), Trip (obstacles)

Fall Protection: from elevated positions

Emergency Procedures: Take primary First Aid actions, Call for help

Call: 5-111

Hospital/Clinic: Put Emergency Services Phone: 5-111 Paramedic: 5-111

Hospital Address: _____

Special Equipment: Fork lift, Man lift, Frost End Loader

Other: _____

ATTENDEES

NAME PRINTED

SIGNATURE

Paul Andreas
Tom Danner
Joe C
Kevin Holman

Paul Andreas
Tom Danner
Joe C
Kevin Holman

Meeting conducted by: Paul Andreas

NAME PRINTED

SIGNATURE

Supervisor: Tom Danner

Manager: _____

100

5

7-601 JAN 9

JOHNSON 515153

CH

Flowing & Cleaning Equipment Type 1000

Flowing & Cleaning Equipment Type 1000

9. Acid hats - S. life glasses and pl 11
 10. Chromatids - Cytoside Hydro Carbon 11

Slip (wet surfaces) 17.1

Emergency Procedure Take necessary First Aid, telephone, and call 911 or visit a clinic

ospital: Clark Health & Emergency Services Phone: (5-11)
Paramedic Phone: _____

Hospital Address _____

Spectra Equipments	Fork Lift	Man Lift	Front End Loader

Other _____

NAME PRINTED _____
SIGNATURE _____

NAME: ROBERT
SIGNATURE: [Signature]

SIGNATURE

18

100-443887-100

Yours Devoutly

[illegible]

Feeling confident?

Andres

NAME PRINTED _____

SIGNATURE

TAILGATE SAFETY MEETING

Company ACES Facility Flight
Time 7:00 AM Job Number 515153
Address 800 Hill St City CT
State CT Zip 06103
Event Demolition

SAFETY TOPICS PRESENTED

Protective Clothing: Tyvels, Rubber Gloves, Hard hat, eye resp.
Tools: Safety glasses, ear plugs
Chemical Hazards: Cyanide, Hydro Carbon
Physical Hazards: Slip (wet or slick surfaces), Falling from elevated positions
Emergency Procedures: Primary First Aid, Emergency Services
Call 5-1-1
Hospital/Clinic: Paul Emergency Services Phone () 5-111 Paramedic Paul
Hospital Address: _____
Special Equipment: Fork lift, Man Lift, Front End loader
Other: _____

ATTENDEES

NAME PRINTED
Paul Andrews
Blair Paul
Kevin Robinson
Tom Dorman

SIGNATURE
Paul Andrews
Blair Paul
Kevin Robinson
Tom Dorman

Meeting conducted by Paul Andrews
NAME PRINTED
Paul Andrews

SIGNATURE
Paul Andrews
Manager

TALCOTT SAFETY MEETING

Facility

Light

SE/SIS

CT

SAFETY NOTICE

Equipment: Forklift, Work gloves, boots, Safety glasses, Cyanide, Hydro Carbon

Work on slick surfaces, Working from manholes

Emergency procedures Give Primary First Aid, Call 911

Special Clinic: PWT Emergency Sec. Phone: 1-511

Hospital Address:

Special Equipment: Front end loader, Man 1:10

Other:

ATTENDEES

NAME PRINTED

SIGNATURE

John Andreas

John Andreas

John Andreas

John Andreas

John Andreas

John Andreas

NAME PRINTED

SIGNATURE

John Andreas

UNITED STATES AIR FORCE

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ATTENDEES

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SAFETY TO CHIEF

Typhlo, Sarcophaga, etc.
Eye protrusion, eye pro-
trusion, Hydrochrysis
wet or slides, etc.
Trip, and other
primary Ectoparasites

Emergency Ser. Phone: 5-111

Foster Address:

Special Equipment: Rack Lift, Man Lift, Free Crane, etc.

Cutting Tools, Demo Saw

Other _____

ATTENDEE

*James D. [illegible]
[illegible] [illegible]
[illegible] [illegible]*

Andreas

NAME PRINTED: STANLEY

TAILGATE SAFETY MEETING

Facility Lab
Address 515 S. 1st St.
City Portland, ME
State ME
Zip 04101

SAFETY TOPICS PRESENT

Proper use of the Tyvek Sarcosuit, Fall Protection, gloves
Proper use of the Sarcosuit, Safety goggles and mask
Chemical Safety, Hydration, Work Rest
Proper use of the wet or stick saws, Proper use of the
Proper use of the Tarp, objects and work, Proper use of the
Emergency First Aid, Primary First Aid, Proper use of the
CPR, S-1111

Hospital Address Emergency Ser. Phone: 5-1111 Paramedic Phone: 5-1111

Special Equipment Man lifts, Fork lift, Front End Loaders,
Grading trucks, Demosaws.

Other _____

ATTENDEES

NAME	SIGNATURE
Paul Anderson	<i>Paul Anderson</i>
Steve Plummer	<i>Steve Plummer</i>
John H. Horgan	<i>John H. Horgan</i>
Joe	<i>Joe</i>
Tom Dorman	<i>Tom Dorman</i>

*Meeting conducted by Paul Anderson
NAME PRINTED Paul Anderson
SIGNATURE Paul Anderson

TAILGATES/SAFETY

Facility: Boys

Time: 7:00 AM

5353

10

10

10

10

SAFETY TOPICS

Equipment: Tyres, Scaffolds, Ladders, etc.

Eye protection, ear plugs, etc.

Hydrocarbon, etc.

Slip, wet or slick surfaces, etc.

From elevated positions, etc.

Use primary lint air, etc.

Use primary lint air, etc.

Use primary lint air, etc.

Use primary lint air, etc.

Use primary lint air, etc.

Use primary lint air, etc.

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Use primary lint air, etc.

ATTENDEES

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NAME PRINTED

25155

SATURN COUNCIL

10-10-68

100-443887-100

SECRET

Joseph E. ... Phone: 1-571-1111

Hospital Acquired

Special Equipment: Hand LIFT. FRONT END LOADER. BACKHOE. SKID STEER.

FROM VERO SANS

Other

ATTENDEES

[Handwritten signature]

MAIL SALARY LIST

SALESMAN

1945-1946

1947-1948

1949-1950

1951-1952

1953-1954

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ATTENDANCE

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Tyvek

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to see primary forest

Emergency Ser. Phones

Emergency Ser. Phones

Species Equipped 1 lbs. man a sister

Footwear, Yards, Demo Saus.

Other

ATTENDEE

John H. H. H.

John H. H. H.

John H. H. H.

Andrews

PRINTED

1951

UNITED STATES GOVERNMENT

SAFETY

SAFETY

SAFETY

SAFETY

SAFETY

SAFETY

SAFETY

SAFETY

SAFETY

SAFETY

SAFETY

SAFETY

ATTENDANCE

SIGNATURE

[Signature]

[Signature]

[Signature]

Very

MANITANGATI

Time 2 PM

15/5/51

SAFETY NOTICE

1. All objects on ground
2. From cleared area
3. No work for work

Phone 15-111

Front End Loader
Turn, Man 15/5/51

NAME PRINTED

ATTENDEES

Signature

[Handwritten signatures]

15/5/51

[Handwritten signature]

SIGNATURE

Manager

11/16/73 11:00 AM

505

Supplies (CASH)

Specs. Sec. (Phone) 5-1111

Specs. Sec. 5-1111 5-1111 5-1111

Other 5-1111 5-1111 5-1111

ATTENDEES

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SAFETY MEETING

SAFETY MEETING

Proposed Company _____
Address _____

Company Name _____

From _____

Emergency Phone _____

Hospital Name _____ Emergency Sec. Phone _____

Hospital Address _____

Special Equipment _____

Other _____

Other _____

ATTENDEES

SIGNATURE

[Handwritten signatures]

Meeting conducted by _____

LEGAL SALES UNIT

THE

ATTENDANCE

DATE

TIME

NAME

INITIALS

SIGNATURE

DATE

TIME

NAME

INITIALS

SIGNATURE

DATE

TIME

NAME

INITIALS

SIGNATURE

DATE

TIME

NAME

INITIALS

SIGNATURE

DATE

TIME

NAME

INITIALS

ATTENDEES

1. [Signature]

2. [Signature]

3. [Signature]

4. [Signature]

5. [Signature]

6. [Signature]

7. [Signature]

8. [Signature]

THE GATEWAY



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Expenditure Survey

100-443886-100

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Special Equipment	None	55507
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Other cause all cases of skin which come from the Congo.

S. B. S.

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ATTENDEES:

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Meeting customer needs

Address _____

NAME: DATE:



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APPENDIX I

Copies of Manifests



HAZARDOUS WASTE MANIFEST

(As Required By The Alabama Department of Environmental Management)

Print or type. (Form designed for use on elite (12-pitch) typewriter.)

Form Approved. OMB No. 2050-0039. Expires 9-30-91

UNIFORM HAZARDOUS WASTE MANIFEST		1. Generator's US EPA ID No.	Manifest Document No.	2. Page 1 of	Information in the shaded areas is not required by Federal law.
3. Generator's Name and Mailing Address PRATT & WHITNEY (DB 122-16) 400 MAIN STREET, EAST HARTFORD, CT 06108		C T D 9 9 0 6 7 2 0 8 1 0 2 0 6 3		4. Generator's Phone (203) 565-3435	
5. Transporter 1 Company Name Sealand Environmental		6. US EPA ID Number CT 0980521280		7. Transporter 1 Facility's ID Same	
8. Designated Facility Name and Site Address CHEMICAL WASTE MANAGEMENT, INC. Emelle Facility Alabama Highway 17 at Mile Marker 163 Emelle, Alabama 35459		9. US EPA ID Number AL D 0 0 0 6 2 2 4 6 4		10. Facility's Phone 205/652-9721	
11. US DOT Description (Including Proper Shipping Name, Hazard Class, and ID Number)		12. Containers No.	13. Total Quantity	14. Unit Wt/Vol	15. L Waste No.
a. RC, HAZARDOUS WASTE, SOLID, N.O.S. (FOCI, P001, P009) ORM-E NA9189 (P001, P007, P009)		001	30540	P	
b. CWM Profile Number					
c. CWM Profile Number					
d. CWM Profile Number					
J. Additional Descriptions for Materials Listed Above		K. Handling Codes for Wastes Listed Above			
		a. L c. d.			
15. Special Handling Instructions and Additional Information					
Work Order #: Purchase Order #:					
16. GENERATOR'S CERTIFICATION I hereby declare that the contents of this consignment are fully and accurately described above by proper shipping name and are classified, packed, marked, and labeled and are in all respects in proper condition for transport by highway according to applicable international and national government regulations. If I am a large quantity generator, I certify that I have a program in place to reduce the volume and toxicity of waste generated to the degree I have determined to be economically practicable and that I have selected the practicable method of treatment, storage, or disposal currently available to me which minimizes the present and future threat to human health and the environment. OR, if I am a small quantity generator, I have made a good faith effort to minimize my waste generation and select the best waste management method that is available to me and that I can afford.					
Printed/Typed Name		Signature		Month Day Year	
Walter J. Trench		[Signature]		11/26/1989	
17. Transporter 1 Acknowledgement of Receipt of Materials		Signature		Month Day Year	
Walter J. Trench		[Signature]		11/26/89	
18. Transporter 2 Acknowledgement of Receipt of Materials		Signature		Month Day Year	
Bill Bennett		[Signature]		11/20/89	
19. Discrepancy Indication Space					
20. Facility Owner or Operator: Certification of receipt of hazardous materials covered by this manifest except as noted in Item 19.					
Printed/Typed Name		Signature		Month Day Year	
[Signature]		[Signature]		11/20/89	



HAZARDOUS WASTE MANIFEST

(As Required By The Alabama Department of Environmental Management)

Please print or type. (Form designed for use on elite (12-pitch) typewriter.)

Form Approved. OMB No. 2050-0039. Expires 9-30-91

UNIFORM HAZARDOUS WASTE MANIFEST		1. Generator's US EPA ID No.	Manifest Document No.	2. Page 1 of	Information in the shaded areas is not required by Federal law.
3. Generator's Name and Mailing Address PRATT & WHITNEY (SHEL22-16) 400 MAIN STREET, EAST HARTFORD, CT 06108		C T D 9 9 0 6 7 2 0 8 1 0 2 0 6 4		4. State Manifest Document Number CWMA 476052	
4. Generator's Phone ()		5. Transporter's Company Name SEABOARD ENVIRONMENTAL SERVICES SAME		6. US EPA ID Number C T D 9 8 0 5 2 1 2 8 0 C T D 9 8 0 5 2 1 2 8 0	
5. Transporter's Phone ()		6. US EPA ID Number		7. State Transporter's ID 1469 A CT	
9. Designated Facility Name and Site Address CHEMICAL WASTE MANAGEMENT, INC. Emelle Facility Alabama Highway 17 at Mile Marker 163 Emelle, Alabama 35459		10. US EPA ID Number A L D 0 0 0 6 2 2 4 6 4		8. State Facility's ID SAME	
11. US DOT Description (Including Proper Shipping Name, Hazard Class, and ID Number)		12. Containers		13. Total Quantity	14. Unit Wt/Vol
a. PO, HAZARDOUS WASTE, SOLID, N.O.S. OSM-E NA9189 (POC1, P007, P009) CWM Profile Number J 52286		No. 0101 Type CM		3161080	P
b. CWM Profile Number					
c. CWM Profile Number					
d. CWM Profile Number					
J. Additional Descriptions for Materials Listed Above		K. Handling Codes for Wastes Listed Above			
a. L		c.			
b.		d.			
15. Special Handling Instructions and Additional Information					
Work Order #: Purchase Order #:					
16. GENERATOR'S CERTIFICATION: I hereby declare that the contents of this consignment are fully and accurately described above by proper shipping name and are classified, packed, marked, and labeled, and are in all respects in proper condition for transport by highway according to applicable international and national government regulations.					
If I am a large quantity generator, I certify that I have a program in place to reduce the volume and toxicity of waste generated to the degree I have determined to be economically practicable and that I have selected the practicable method of treatment, storage, or disposal currently available to me which minimizes the present and future threat to human health and the environment. OR, if I am a small quantity generator, I have made a good faith effort to minimize my waste generation and select the best waste management method that is available to me and that I can afford.					
Printed/Typed Name		Signature		Month Day Year	
PO's BY EMELLE				11/26/89	
Printed/Typed Name		Signature		Month Day Year	
Walter Terrell				11/26/89	
18. Transporter's Acknowledgment of Receipt of Materials		Signature		Month Day Year	
Ralph Moore				11/20/89	
19. Discrepancy Indication Space					
20. Facility Owner or Operator: Certification of receipt of hazardous materials covered by this manifest except as noted in Item 19.					
Printed/Typed Name		Signature		Month Day Year	
Walter Terrell				11/26/89	



HAZARDOUS WASTE MANIFEST

(As Required By The Alabama Department of Environmental Management)

Print or type. (Form designed for use on elite (12-pitch) typewriter.)

Form Approved. OMB No. 2050-0039. Expires 9-30-91

UNIFORM HAZARDOUS WASTE MANIFEST

1. Generator's US EPA ID No.

Manifest Document No.

2. Page 1 of

Information in the shaded areas is not required by Federal law.

3. Generator's Name and Mailing Address

CTD99067208102065

4. Manifest Document Number

CWMA 476053

PRATT & WHITNEY (DB 1220 16)

400 MAIN STREET, EAST HARTFORD, CT 06108

4. Generator's Phone

5. Transporter 1 Company Name

565-3435

6. US EPA ID Number

7. Transporter 2 Company Name

ALD000622464

8. US EPA ID Number

9. Designated Facility Name and Site Address

10. US EPA ID Number

CHEMICAL WASTE MANAGEMENT, INC.
Emelle Facility
Alabama Highway 17 at Mile Marker 163
Emelle, Alabama 35459

11. Facility's ID

12. Facility's Phone

205/652-9721

11. US DOT Description (Including Proper Shipping Name, Hazard Class, and ID Number)

12. Containers
No. Type

13. Total Quantity

14. Unit
Wt/Vol

15. Waste No.

a. RO, HAZARDOUS WASTE, SOLID, N.O.S.
CWM Profile Number

b. CWM-E RA9189 (P001, P007, P009)

J 57286

001

CM

9,580

P

CWM Profile Number

CWM Profile Number

CWM Profile Number

J. Additional Descriptions for Materials Listed Above

K. Handling Codes for Wastes Listed Above

15. Special Handling Instructions and Additional Information

Work Order #:

Purchase Order #:

16. GENERATOR'S CERTIFICATION: I hereby declare that the contents of this consignment are fully and accurately described above by proper shipping name and are classified, packed, marked, and labeled, and are in all respects in proper condition for transport by highway according to applicable international and national government regulations

If I am a large quantity generator, I certify that I have a program in place to reduce the volume and toxicity of waste generated to the degree I have determined to be economically practicable and that I have selected the practicable method of treatment, storage, or disposal currently available to me which minimizes the present and future threat to human health and the environment. OR, if I am a small quantity generator, I have made a good faith effort to minimize my waste generation and select the best waste management method that is available to me and that I can afford.

Printed/Typed Name

Signature

Month Day Year

17. Generator's Acknowledgement of Receipt of Materials

Printed/Typed Name

Signature

Month Day Year

18. Transporter 2 Acknowledgement of Receipt of Materials

Printed/Typed Name

Signature

Month Day Year

19. Discrepancy Indication Space

20. Facility Owner or Operator: Certification of receipt of hazardous materials covered by this manifest except as noted in Item 19.

Printed/Typed Name

Signature

Month Day Year



HAZARDOUS WASTE MANIFEST

(As Required By The Alabama Department of Environmental Management)

Use print or type. (Form designed for use on elite (12-pitch) typewriter.)

Form Approved. OMB No. 2050-0039. Expires 9-30-91

UNIFORM HAZARDOUS WASTE MANIFEST		1. Generator's US EPA ID No.	Manifest Document No.	2. Page 1 of	Information in the shaded areas is not required by Federal law.
3. Generator's Name and Mailing Address PRATT & WHITNEY (MS 122-16) 400 MAIN STREET, EAST HARTFORD, CT 06108		C T D 9 9 0 6 7 2 0 8 1 0 2 0 6		A. State Manifest Document Number CWMA 476055	
4. Generator's Phone 565-3435		8. US EPA ID Number ND 054126164		C. State Generator's ID 116 TTY AIR	
5. Transporter 1 Company Name Freehold Cottage Inc		9. US EPA ID Number ND 054126164		D. Transporter's Phone 203-462-1001	
6. Transporter 2 Company Name ---		10. US EPA ID Number ---		E. State Transporter's ID ---	
9. Designated Facility Name and Site Address CHEMICAL WASTE MANAGEMENT, INC. Emelle Facility Alabama Highway 17 at Mile Marker 163 Emelle, Alabama 35459		10. US EPA ID Number A L D 0 0 0 6 2 2 4 6 4		F. Transporter's Phone ---	
11. US DOT Description (Including Proper Shipping Name, Hazard Class, and ID Number) RQ, HAZARDOUS WASTE SOLID, N.O.S. ORM-E NA9189 (P001, P007, P009)		12. Containers No. Type 001 CM		13. Total Quantity 1944P	14. Unit Wt/Vol P
a. CWM Profile Number J 52286					L. Waste No. P001, P007, P009
b. CWM Profile Number ---					
c. CWM Profile Number ---					
d. CWM Profile Number ---					
J. Additional Descriptions for Materials Listed Above STATE OF ORIGIN CONNECTICUT ALABAMA WASTE CODE CWR030590-0055				K. Handling Codes for Wastes Listed Above a. L c. --- b. --- d. ---	
15. Special Handling Instructions and Additional Information Work Order #: 891211061 Purchase Order #: ---					
16. GENERATOR'S CERTIFICATION. I hereby declare that the contents of this consignment are fully and accurately described above by proper shipping name and are classified, packed, marked, and labeled, and are in all respects in proper condition for transport by highway according to applicable international and national government regulations. If I am a large quantity generator, I certify that I have a program in place to reduce the volume and toxicity of waste generated to the degree I have determined to be economically practicable and that I have selected the practicable method of treatment, storage, or disposal currently available to me which minimizes the present and future threat to human health and the environment. OR, if I am a small quantity generator, I have made a good faith effort to minimize my waste generation and select the best waste management method that is available to me and that I can afford. Printed/Typed Name: P. C. W. BY WILLIAM A. CHESLEY Signature: William A. Chesley Month Day Year: 12 10 89					
17. Transporter 1 Acknowledgement of Receipt of Materials Printed/Typed Name: MICHAEL H. KADIN, Sr Signature: Michael H. Kadin Month Day Year: 12 10 89					
18. Transporter 2 Acknowledgement of Receipt of Materials Printed/Typed Name: --- Signature: --- Month Day Year: ---					
19. Discrepancy Indication Space ---					
20. Facility Owner or Operator: Certification of receipt of hazardous materials covered by this manifest except as noted in Item 19. Printed/Typed Name: Tom Lewis Signature: Tom Lewis Month Day Year: 11 11 89					



HAZARDOUS WASTE MANIFEST

(As Required By The Alabama Department of Environmental Management)

print or type. (Form designed for use on elite (12-pitch) typewriter.)

Form Approved. OMB No. 2050-0039. Expires 9-30-91

UNIFORM HAZARDOUS WASTE MANIFEST		1. Generator's US EPA ID No.	Manifest Document No.	2. Page 1 of	Information in the shaded areas is not required by Federal law.
3. Generator's Name and Mailing Address PRATT & WHITNEY (DB 122-12) 400 MAIN STREET, EAST HARTFORD, CT. 06108		CTD99067208102068		A. State Manifest Document Number CWMA 476056	
4. Generator's Phone (203) 565-3435		5. Transporter 1 Company Name Freehold Cartage Inc		C. State Transporter's ID 291 HAK	
6. Transporter 1 US EPA ID Number INTD054126164		7. Transporter 2 Company Name Freehold Cartage Inc		D. Transporter's Phone (203) 462-4001	
8. Transporter 2 US EPA ID Number INTD105411261164		9. Designated Facility Name and Site Address CHEMICAL WASTE MANAGEMENT, INC. Emelle Facility Alabama Highway 17 at Mile Marker 163 Emelle, Alabama 35459		E. State Transporter's ID 79577	
10. Facility's US EPA ID Number ALD000622464		F. Transporter's Phone (203) 462-4001		G. State Facility's ID	
H. Facility's Phone 205/652-9721					
11. US DOT Description (Including Proper Shipping Name, Hazard Class, and ID Number)		12. Containers	13. Total Quantity	14. Unit Wt/Vol	L. Waste No.
a. NO, HAZARDOUS WASTE SOLID, N.O.S. ORM E NA9189 (P001, P007, P009)		No. 001	Type CH	22020	P001
b. CWM Profile Number					
c. CWM Profile Number					
d. CWM Profile Number					
J. Additional Descriptions for Materials Listed Above SOURCE OF ORIGIN CONNECTICUT ALABAMA WASTE CODE CM030590-0055		K. Handling Codes for Wastes Listed Above			
		a. L			
		b.			
		c.			
		d.			
15. Special Handling Instructions and Additional Information					
Work Order #: 871211061 Purchase Order #:					
16. GENERATOR'S CERTIFICATION: I hereby declare that the contents of this consignment are fully and accurately described above by proper shipping name and are classified, packed, marked, and labeled, and are in all respects in proper condition for transport by highway according to applicable international and national government regulations.					
If I am a large quantity generator, I certify that I have a program in place to reduce the volume and toxicity of waste generated to the degree I have determined to be economically practicable and that I have selected the practicable method of treatment, storage, or disposal currently available to me which minimizes the present and future threat to human health and the environment. OR, if I am a small quantity generator, I have made a good faith effort to minimize my waste generation and select the best waste management method that is available to me and that I can afford.					
Printed/Typed Name		Signature		Month Day Year	
William J. Ebert		<i>[Signature]</i>		12/20/89	
17. Transporter 1 Acknowledgement of Receipt of Materials					
Printed/Typed Name		Signature		Month Day Year	
William J. Ebert		<i>[Signature]</i>		12/20/89	
18. Transporter 2 Acknowledgement of Receipt of Materials					
Printed/Typed Name		Signature		Month Day Year	
William J. Ebert		<i>[Signature]</i>		12/20/89	
19. Discrepancy Indication Space					
20. Facility Owner or Operator: Certification of receipt of hazardous materials covered by this manifest except as noted in Item 19.					
Printed/Typed Name		Signature		Month Day Year	
Dwight Lewis		<i>[Signature]</i>		12/21/89	

APPENDIX J

Copies of Receipts

Profit center: 635

RECEIPT TICKET

Number: 56739

DATE: 12-05-89

SCHEDULED DATE: 12-05-89

12/7

NA
=

TIME IN: 09:01
SCHEDULED TIME:

TRANSPORTER NAME: SEALAND

09:12 12/05/89 GROSS: 62840 LB

TRUCK NUMBER: 20

TRAILER NUMBER: 075

TARE :

LOAD TYPE: R -ROLL-OFF

13:37 12/06/89 NET : 40100 LB

Rec Work Order Seq Number	Manifest Number	Profile Number	Federal EPA Waste Status	Generator Name 22,740	Waste Class
------------------------------	--------------------	-------------------	-----------------------------	--------------------------	----------------

01 891205008-01 0000476051-01 J522860HM CHK RESTRICTION UNITED TECHNOLOGIES S2

COMMENTS:

Approvals: _____ Date: _____ Time: _____

CB Waste: _____ Sampler: _____ Technician: _____

Disposal Method: D81/T45-D81 (Circle One) Disposal Method (Other): _____

Mix Ratio: 1 (Flue Dust) (Waste) Density: _____ (Tanker Only)

Vash Pad Release: _____
(Bulk Only) Signature

Released For Disposal By: _____
Signature

Profit center: 690

RECEIPT TICKET

109

Number:

56740

DATE IN: 12-05-89

SCHEDULED DATE: 12-05-89

NA 12/7

TIME IN:

09:09

SCHEDULED TIME:

IMPORTER NAME: SEALAND

09:20 12/05/89 GROSS: 71340 LB

TRUCK NUMBER: 28

TRAILER NUMBER: 0100

TARE:

LOAD TYPE: R -ROLL-OFF

NET:

13:42 12/06/89 42680 LB

Rec Work Order
Seq Number

Manifest
Number

Profile
Number

Federal EPA
Waste Status

Generator Name
28,660

Waste
Class

01 891205008-02 0000476052-01 J522860HM CHK RESTRICTION UNITED TECHNOLOGIES S2

COMMENTS:

No Admin number

Approvals: _____ Date: _____ Time: _____

CB Waste: _____ Sampler: _____ Technician: _____

Disposal Method: D81/T45-D81 (Circle One) Disposal Method (Other): _____

Mix Ratio: _____ Density: _____
(Flue Dust) (Waste) (Tanker Only)

Wash Pad Release: _____ Released For Disposal By: _____
(Bulk Only) Signature Signature

Profile changed: 890

RECEIPT TICKET

Number: 56877

DATE: 12-08-89

SCHEDULED DATE: 12-05-89

TIME IN: 08:10

SCHEDULED TIME:

NSPORTER NAME: SUTTLES

08:14 12/06/89 GROSS: 40840 LB

TRUCK NUMBER: 209

TRAILER NUMBER: 8

TARE :

LOAD TYPE: FB -FLAT BEDS

14:54 12/06/89 NET 31460 LB

9,380

Rec Work Order
Seq Number

Manifest
Number

Profile
Number

Federal EPA
Waste Status

Generator Name

Waste
Class

01 891205008-03 0000476053-01 J522860HM CHK RESTRICTION UNITED TECHNOLOGIES S2

300" X 90" X 49"

COMMENTS:

No State of Origin

Approvals:

Date:

Time:

CB Waste:

Sampler:

Technician:

Disposal Method:

D81/T45-D81

Disposal Method (Other):

(Circle One)

Mix Ratio:

(Flue Dust)

(Waste)

Density:

(Tanker Only)

Wash Pad Release:

(Bulk Only)

Signature

Released For Disposal By:

Signature

Profile Center: 695

RECEIPT TICKET

Number: 117

57323

DATE IN: 12-11-89

SCHEDULED DATE: 12-11-89

TIME IN:
SCHEDULED TIME:

04:32

IMPORTER NAME: FREEHOLD

TRUCK NUMBER:

TRAILER NUMBER:

GROSS: 62420 LB
04:36 12/11/89

12:13 12/11/89 TARE: 43600 LB

LOAD TYPE: R -ROLL-OFF

NET: 18820

Rec Work Order Seq Number	Manifest Number	Profile Number	Federal EPA Waste Status	Generator Name	Waste Class
------------------------------	--------------------	-------------------	-----------------------------	----------------	----------------

01 891211061-02 0000476055-01 J522860HM CHK RESTRICTION UNITED TECHNOLOGIES S2

COMMENTS:

Approvals: _____ Date: _____ Time: _____

PCB Waste: _____ Sampler: _____ Technician: _____

Disposal Method: D81/T45-D81 (Circle One) Disposal Method (Other): _____

Mix Ratio: _____ Density: _____
(Flue Dust) (Waste) (Tanker Only)

Wash Pad Release: _____ Released For Disposal By: _____
(Bulk Only) Signature Signature

PP# 113 695

RECEIPT TICKET

113

Number: 57290

DATE IN: 12-11-89
SCHEDULED DATE: 12-11-89

TIME IN: 01:35
SCHEDULED TIME:

DZ

NSPORTER NAME: FREEHOLD

TRUCK NUMBER: 100
TRAILER NUMBER: 100

GROSS: 01:38 12/11/89 60300 LB
TARE:

LOAD TYPE: R -ROLL-OFF

11:23 12/11/89 NET 38420 LB

21880

Rec Work Order Seq Number	Manifest Number	Profile Number	Federal EPA Waste Status	Generator Name	Waste Class
------------------------------	--------------------	-------------------	-----------------------------	----------------	----------------

01 891211061-01 0000476056-01 J522860HM CHK RESTRICTION UNITED TECHNOLOGIES S2

COMMENTS:

Approvals: _____ Date: _____ Time: _____

PCB Waste: _____ Sampler: _____ Technician: _____

Disposal Method: D81/T45-D81 (Circle One) Disposal Method (Other): _____

Mix Ratio: _____ Density: _____
(Flue Dust) (Waste) (Tanker Only)

Wash Pad Released: _____ Released For Disposal By: _____
Bulk Only Signature Signature

APPENDIX K

Copies of Disposal Certificates



Chemical Waste Management, Inc.

Emelle Facility
P. O. Box 55
Emelle, Alabama 35459
205/652-9721

Pratt & Whitney (MS 122-16)
400 Main St.
East Hartford, CT 06108

EPA ID NUMBER: ALD000622464

CERTIFICATE OF COMPLIANCE AND DISPOSAL

Chemical Waste Management, Inc., has received Waste

material from Pratt & Whitney

described on Alabama Hazardous Waste Manifest number CWMA

476051. Chemical Waste Management, Inc.,

hereby certifies that Waste material received on

the 5th day of December, 198 9 was

disposed of in compliance with State and Federal regulations.

Glory F. McAbay

Glory McAbay, Document Control Supervisor
February 16, 1990



Chemical Waste Management, Inc.

Emelle Facility

P. O. Box 55

Emelle, Alabama 35459

205/652-9721

Pratt & Whitney (MS 122-16)

400 Main St.

East Hartford, CT 06108

EPA ID NUMBER: ALD000622464

CERTIFICATE OF COMPLIANCE AND DISPOSAL

Chemical Waste Management, Inc., has received Waste

material from Pratt & Whitney

described on Alabama Hazardous Waste Manifest number CWMA

476052

Chemical Waste Management, Inc.,

hereby certifies that Waste material received on

the 5th day of December, 198 9 was

disposed of in compliance with State and Federal regulations.

Glory McAbey, Document Control Supervisor
February 16, 1990



Chemical Waste Management, Inc.

Emelle Facility

P. O. Box 55

Emelle, Alabama 35459

205/652-9721

Pratt & Whitney (MS 122-16)

400 Main St.

East Hartford, CT 06108

EPA ID NUMBER: ALD000622464

CERTIFICATE OF COMPLIANCE AND DISPOSAL

Chemical Waste Management, Inc., has received Waste

material from Pratt & Whitney

described on Alabama Hazardous Waste Manifest number CWMA

476053

Chemical Waste Management, Inc.,

hereby certifies that Waste material received on

the 6th day of December, 198 9 was

disposed of in compliance with State and Federal regulations.

Glory McAboy, Document Control Supervisor
February 16, 1990



Chemical Waste Management, Inc.

Emelle Facility
P. O. Box 55
Emelle, Alabama 35459
205/652-9721

Pratt & Whitney (MS 122-16)
400 Main St.
East Hartford, CT 06108

EPA ID NUMBER: ALD000622464

CERTIFICATE OF COMPLIANCE AND DISPOSAL

Chemical Waste Management, Inc., has received Waste

material from Pratt & Whitney

described on Alabama Hazardous Waste Manifest number CWMA

476055

Chemical Waste Management, Inc.,

hereby certifies that Waste material received on

the 11th day of December, 198 9 was

disposed of in compliance with State and Federal regulations.

Glory F. McAbey

Glory McAbey, Document Control Supervisor
February 16, 1990



Chemical Waste Management, Inc.

Emelle Facility

P. O. Box 55

Emelle, Alabama 35459

205/652-9721

Pratt & Whitney (MS 122-12)

400 Main St.

East Hartford, CT 06108

EPA ID NUMBER: ALD000622464

CERTIFICATE OF COMPLIANCE AND DISPOSAL

Chemical Waste Management, Inc., has received Waste

material from Pratt & Whitney

described on Alabama Hazardous Waste Manifest number CWMA

476056

Chemical Waste Management, Inc.,

hereby certifies that Waste material received on

the 11th day of December, 198 9 was

disposed of in compliance with State and Federal regulations.

Glory McAbey, Document Control Supervisor
February 16, 1990

APPENDIX L

Sampling Logs

DATE	1	2	0	7	8	9
TIME	1	2	0	6		
PAGE	___ OF ___					
PAGE						
PROJECT NO.						

SAMPLE COLLECTION LOG

PROJECT NAME Pratt + Whitney

SAMPLE NO. J 2191

SAMPLE LOCATION WFL 1 A Blend oil

SAMPLE TYPE WATER

COMPOSITE YES X NO

COMPOSITE TYPE N/A

DEPTH OF SAMPLE N/A

WEATHER _____

CONTAINERS USED	AMOUNT COLLECTED

COMMENTS: started flushing at 11:57
 sample collected at 12:06 after about 25 gallons
 had pass thru the line.
 water looked clear.

PREPARED BY: _____

DATE	1	2	0	7	8	9
TIME						
PAGE	OF					
PAGE						
PROJECT NO.						

SAMPLE COLLECTION LOG

PROJECT NAME Pratt + Whitney
 SAMPLE NO. J2192 + 2194
 SAMPLE LOCATION WFL # 2 A + WFL 4A
 SAMPLE TYPE WATER
 COMPOSITE YES X NO
 COMPOSITE TYPE N/A
 DEPTH OF SAMPLE N/A
 WEATHER _____

CONTAINERS USED	AMOUNT COLLECTED

COMMENTS:

started flushing at 12:07
 sample collected at 12:15 after 25 gallons
 had flowed thru lines.

WFL 4A collected @ 12:18 (DUP)

PREPARED BY: _____

DATE	1	2	0	7	8	9
TIME	1	2	2	8		
PAGE	OF					
PAGE						
PROJECT NO.						

SAMPLE COLLECTION LOG

PROJECT NAME Pratt + Whitney

SAMPLE NO. J 2193

SAMPLE LOCATION WFL 3 A

SAMPLE TYPE WATER

COMPOSITE YES X NO

COMPOSITE TYPE N/A

DEPTH OF SAMPLE N/A

WEATHER _____

CONTAINERS USED	AMOUNT COLLECTED

COMMENTS: started flushing @ 12:20
Sample collected at 12:28 after ~25 gallons
had passed thru line.

PREPARED BY: _____



DATE	1	2	0	7	8	9
TIME	1	1	5	0		
PAGE	OF					
PAGE						
PROJECT NO.						

SAMPLE COLLECTION LOG

PROJECT NAME Pratt + Witney

SAMPLE NO. J 2190

SAMPLE LOCATION INFLUENT A

SAMPLE TYPE WATER

COMPOSITE YES X NO

COMPOSITE TYPE _____

DEPTH OF SAMPLE N/A

WEATHER Cold, clear

CONTAINERS USED	AMOUNT COLLECTED

COMMENTS: water was allowed to run for 5 min.
prior to sampling.

PREPARED BY: _____

DATE	1	2	0	7	8	9
TIME						
PAGE	OF					
PAGE						
PROJECT NO.						

SAMPLE COLLECTION LOG

PROJECT NAME Pratt + Whitney

SAMPLE NO. _____

SAMPLE LOCATION Cieling of Incinerator building

SAMPLE TYPE WIPE

COMPOSITE YES X NO

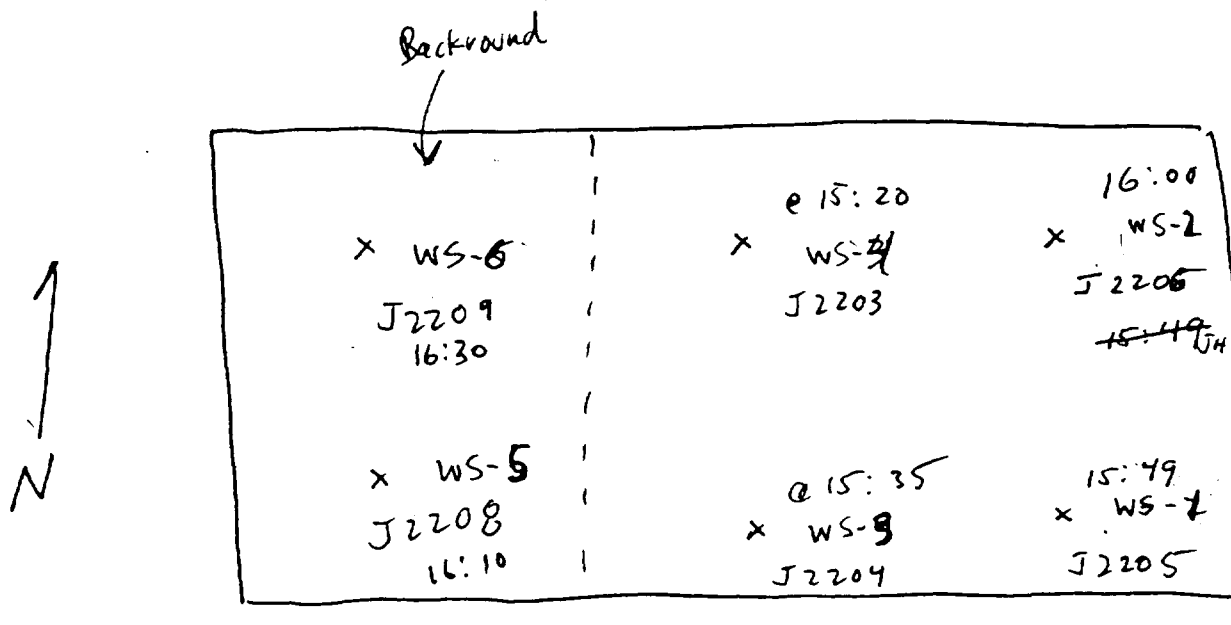
COMPOSITE TYPE _____

DEPTH OF SAMPLE _____

WEATHER _____

CONTAINERS USED	AMOUNT COLLECTED
8oz glass	3 pads

COMMENTS:



J2207
Field Blank
@ 15:40

Travel blank
J2210

PREPARED BY: _____

DATE	1	2	0	7	8	9
TIME						
PAGE	OF					
PAGE						
PROJECT NO.						

SAMPLE COLLECTION LOG

PROJECT NAME Pratt + Whitney

SAMPLE NO. _____

SAMPLE LOCATION Pit Area for air scrubber.

SAMPLE TYPE concrete chip

COMPOSITE YES X NO

COMPOSITE TYPE NO

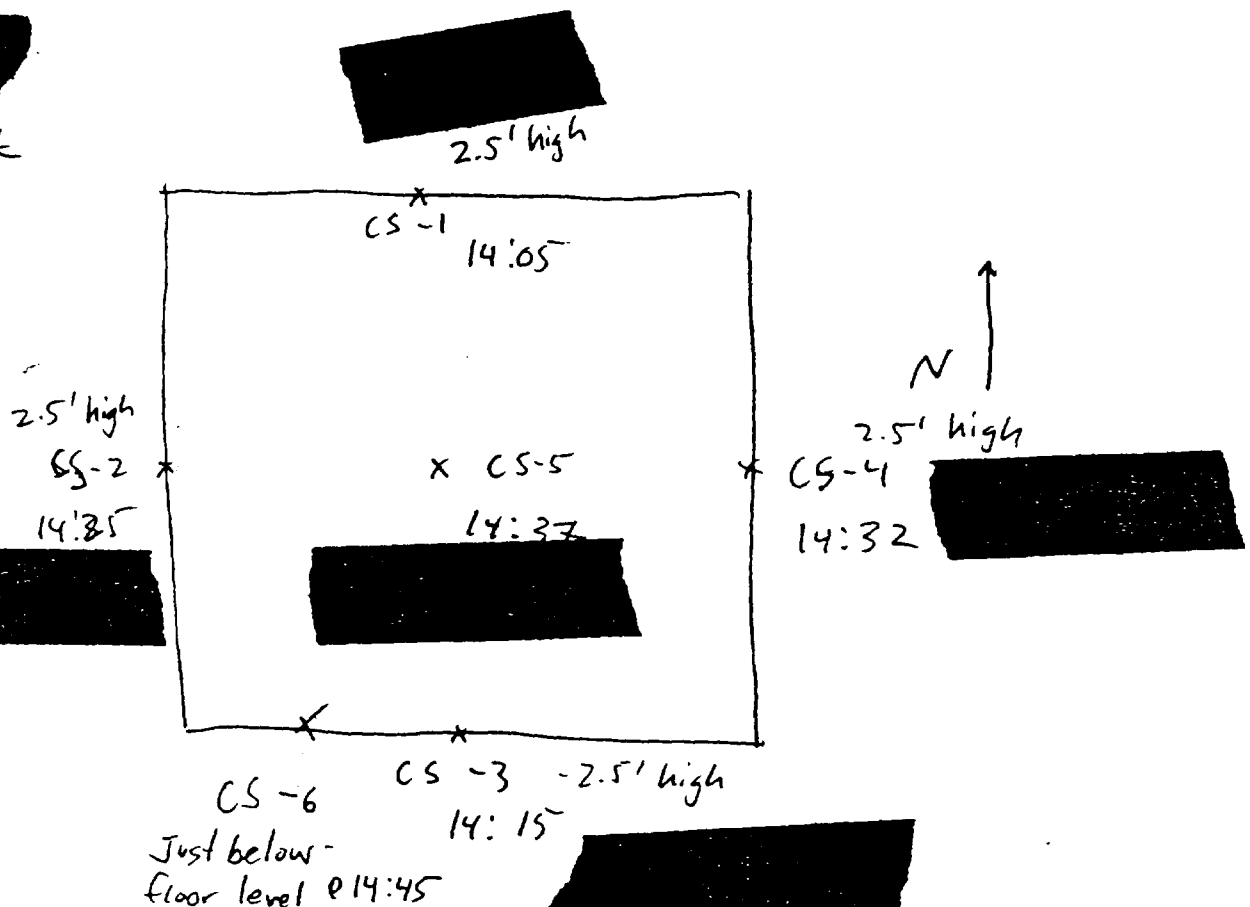
DEPTH OF SAMPLE _____

WEATHER chld, clear

CONTAINERS USED	AMOUNT COLLECTED
8oz glass	~10g.

COMMENTS:

irip Blank



PREPARED BY: _____



INTERNATIONAL
TECHNOLOGY
CORPORATION

CHAIN-OF-CUSTODY RECORD

R/A Control No. 11 306

C/C Control No. 161972

PROJECT NAME/NUMBER

Pratt + Whitney

LAB DESTINATION

Aviation Labs

SAMPLE TEAM MEMBERS

Jacques Hill

CARRIER/WAYBILL NO.

Sample Number	Sample Location and Description	Date and Time Collected	Sample Type	Container Type	Condition on Receipt (Name and Date)	Disposal Record No.
J2190	Influent A	12-7-89	WATER			
J2191	WFL-1 A					
J2192	WFL-2 A					
J2193	WFL-3 A					
J2194	WFL-4 A					
J2195	Travel Blank			40ml vial		
J2196	CS-1	12-7-89 14:05	concrete chips	8oz glass		
J2197	CS-2	12-7-89 14:25				
J2198	CS-3	14:15				
J2199	CS-4	14:32				

Special Instructions:

Possible Sample Hazards:

SIGNATURES: (Name, Company, Date and Time)

1. Relinquished By:

[Signature] 12/7/89 c. 17:47

3. Relinquished By:

Received By:

[Signature]

Received by:

2. Relinquished By:

4. Relinquished By:

Received By:

Received By:



INTERNATIONAL
TECHNOLOGY
CORPORATION

CHAIN-OF-CUSTODY RECORD

R/A Control No. 1-307

C/C Control No. 161970

PROJECT NAME/NUMBER Pentl + Whitney

LAB DESTINATION Alexell Lab.

SAMPLE TEAM MEMBERS Jacqueline Hill / IT

CARRIER/WAYBILL NO. _____

Sample Number	Sample Location and Description	Date and Time Collected	Sample Type	Container Type	Condition on Receipt (Name and Date)	Disposal Record No.
J2200	CS-5	12-7-89 14:37	chip	8oz glass		
J2201	CS-6	14:45	chip	8oz glass		
J2202	Imp Blank for chips		WATER	8oz glass		
J2203	C W#-4	15:20	WIPE	8oz glass		
J2204	C W#-3	15:35				
J2205	C W#-1	15:49				
J2206	C W#-2	16:00				
J2207	WIPE SAMPLE Field Blank	15:40				
J2208	C W#-5	16:10				
J2209	C W#-6	16:30				

Special Instructions: _____

Possible Sample Hazards: _____

SIGNATURES: (Name, Company, Date and Time)

1. Relinquished By: Jacqueline Hill 12/7/89 17:47

3. Relinquished By: _____

Received By: James W. Smith

Received by: _____

2. Relinquished By: _____

4. Relinquished By: _____

Received By: _____

Received By: _____



**INTERNATIONAL
CHNOLOGY
RPORATION**

REQUEST ANALYSIS

R/A Control No. 17107
C/C Control No. 16170
12/7/89

PROJECT NAME Pratt + Whitney
PROJECT NUMBER _____
PROJECT MANAGER Scott Singer
BILL TO Pratt + Whitney

DATE SAMPLES SHIPPED _____
LAB DESTINATION Naval Labs
LABORATORY CONTACT Janie Palana
SEND LAB REPORT TO Scott Singer

PURCHASE ORDER NO. _____

DATE REPORT REQUIRED _____
PROJECT CONTACT Scott Singer
PROJECT CONTACT PHONE NO. _____

Sample No.	Sample Type	Sample Volume	Preservative	Requested Testing Program	Special Instructions
J2200	WHIP	8oz	NO	VO's, CN, Metals	
J2201	chip	8oz		VO's, CN, Metals	
J2202	WATER	2x4oz		VO's	
J2203	WIPE	3 pads	HNO ₃ , NaOH, MeOH	VO's, CN, Metals	
J2204	↓	↓	↓	↓ ↓ ↓	
J2205	↓	↓	↓	↓ ↓ ↓	
J2206	↓	↓	↓	↓ ↓ ↓	
J2207	↓	↓	↓	↓ ↓ ↓	
J2208	↓	↓	↓	↓ ↓ ↓	
J2209	↓	↓	↓	↓ ↓ ↓	

TURNAROUND TIME REQUIRED: (Rush must be approved by the Project Manager.)

Normal _____ Rush _____ (Subject to rush surcharge)

POSSIBLE HAZARD IDENTIFICATION: (Please indicate if sample(s) are hazardous materials and/or suspected to contain high levels of hazardous substances)

Nonhazard _____ Flammable _____ Skin Irritant _____ Highly Toxic _____ Other _____
(Please Specify)

SAMPLE DISPOSAL (Please indicate disposition of sample following analysis. Lab will charge for packing, shipping, and disposal.)

Return to Client _____ Disposal by Lab _____

FOR LAB USE ONLY

Received By Janet W. Smith

Date/Time _____

WHITE - Original, to accompany samples
YELLOW - Field copy



INTERNATIONAL
TECHNOLOGY
CORPORATION

REQUEST FOR ANALYSIS

R/A Control No. 17 306

C/C Control No. 16, 772

PROJECT NAME Profl & Whitney
PROJECT NUMBER _____
PROJECT MANAGER Scott Singer
BILL TO Profl & Whitney
1101 Ford

DATE SAMPLES SHIPPED 12/7/89
LAB DESTINATION Averill Labs
LABORATORY CONTACT _____
SEND LAB REPORT TO Scott Singer

PURCHASE ORDER NO. _____

DATE REPORT REQUIRED _____
PROJECT CONTACT _____
PROJECT CONTACT PHONE NO. _____

Sample No.	Sample Type	Sample Volume	Preservative	Requested Testing Program	Special Instructions
J2190	WATER		as needed	VO's, metals, cyanide	
J2191	↓		↓	↓	
J2192	↓		↓	↓	
J2193	↓		↓	↓	
J2194	↓		↓	↓	
J2195	↓	2 x 40ml	NO	VO's	
J2196	concrete chip	802	NO	VO's, metals, cyanide	
J2197	↓	↓	↓	↓	
J2198	↓	↓	↓	↓	
J2199	↓	↓	↓	↓	

TURNAROUND TIME REQUIRED: (Rush must be approved by the Project Manager.)

Normal _____

Rush _____ (Subject to rush surcharge)

POSSIBLE HAZARD IDENTIFICATION: (Please indicate if sample(s) are hazardous materials and/or suspected to contain high levels of hazardous substances)

Nonhazardous _____

Flammable _____

Skin Irritant _____

Highly Toxic _____

Other _____
(Please Specify)

SAMPLE DISPOSAL: (Please indicate disposition of sample following analysis. Lab will charge for packing, shipping, and disposal.)

Return to Client _____

Disposal by Lab _____

FOR LAB USE ONLY

Received By

James W. Smith

Date/Time _____

WHITE - Original, to accompany samples

YELLOW - Field copy

APPENDIX M

Raw Analytical Data

AVERILL **ENVIRONMENTAL LABORATORY INC** 100 Northwest Drive Plainville, CT 06062 (203) 747-0676 FAX (203) 747-9264

Lawton S. Averill, Director

CT Public Health Lab No. PH-0513

REPORT ON LABORATORY EXAMINATIONS

To Client: Pratt & Whitney
East Hartford, Ct. 06108

Date: December 15, 1989

SAMPLE DATA:

Collected By: IT Corp.
Jacques Hill

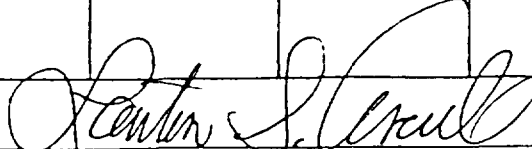
SAMPLE NO.	DESCRIPTION OF SAMPLE
	Rinsate samples collected and received 12/7/89 from Pratt & Whitney, East Hartford, Ct., for hazardous waste incinerator closure plan analysis.
289-26-2672	IT Sample No. J2190, Influent A
289-26-2673	IT Sample No. J2191, WFL-1A
289-26-2674	IT Sample No. J2192, WFL-2A
289-26-2675	IT Sample No. J2193, WFL-3A
289-26-2676	IT Sample No. J2194, WFL-4A

LABORATORY FINDINGS:

(milligrams per liter, mg/l, except as noted)

ANALYSIS FOR	SAMPLE NO.				
	289-26-2672	289-26-2673	289-26-2674	289-26-2675	289-26-2676
Arsenic	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Barium	< 0.01	0.01	< 0.01	0.01	< 0.01
Cadmium	< 0.006	< 0.006	< 0.006	< 0.006	< 0.006
Chromium, Total	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Chromium, Hexavalent	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Copper	0.21	0.21	0.10	0.09	0.09
Lead	< 0.01	0.01	< 0.01	< 0.01	< 0.01
Mercury	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001
Nickel	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02
Selenium	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Silver	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Cyanide, Total	< 0.005	< 0.005	0.12	< 0.005	0.21
Cyanide, Amenable	-	-	0.08	-	0.18

cc: Pratt & Whitney
Attn: Scott Singer


 The Averill Environmental Laboratory, Inc.

AVERILL ENVIRONMENTAL LABORATORY INC

Lawton S. Averill, Director

100 Northwest Drive
Plainville, CT 06062
(203) 747-0676
FAX (203) 747-9264

CT Public Health Lab No. PH-0513

REPORT ON LABORATORY EXAMINATIONS

To Client: Pratt & Whitney
East Hartford, Ct. 06108

Date: December 15, 1989

SAMPLE DATA:

Collected By: IT Corp.
Jacques Hill

SAMPLE NO.	DESCRIPTION OF SAMPLE
	Rinsate samples collected and received 12/7/89 from Pratt & Whitney East Hartford, Ct., for hazardous waste incinerator closure plan analysis.
289-26-2672	IT Sample No. J2190, Influent A, analyzed 12/8/89.
289-26-2673	IT Sample No. J2191, WFL-1A, analyzed 12/10/89.
289-26-2674	IT Sample No. J2192, WFL-2A, analyzed 12/8/89.
289-26-2675	IT Sample No. J2193, WFL-3A, analyzed 12/10/89.
289-26-2676	IT Sample No. J2194, WFL-4A, analyzed 12/10/89.

LABORATORY FINDINGS:

(parts per billion, ppb, except as noted)

ANALYSIS FOR	SAMPLE NO.				
	289-26-2672	289-26-2673	289-26-2674	289-26-2675	289-26-2676
Methylene chloride	ND	58 CB	ND	ND	ND
1,1-Dichloroethene	ND	ND	ND	ND	ND
1,1,1-Trichloroethane	ND	12 CB	22	ND	16 CB
Carbon Tetrachloride	ND	ND	ND	ND	ND
Trichloroethene	ND	122	ND	ND	ND
Tetrachloroethene	ND	48	3400	ND	3700
	ND \leq 5 ppb	ND \leq 5 ppb	ND \leq 10 ppb	ND \leq 5 ppb	ND \leq 10 ppb

CB - The results of the analysis have been corrected for the presence of the compound in the blank.

cc: Pratt & Whitney - Scott Singer

The Averill Environmental Laboratory, Inc.

AVERILL ENVIRONMENTAL LABORATORY INC

Lawton S. Averill, Director

100 Northwest Drive
Plainville, CT 06062
(203) 747-0676
FAX (203) 747-9264

CT Public Health Lab No. PH-0513

REPORT ON LABORATORY EXAMINATIONS

To Client: Pratt & Whitney
East Hartford, Ct. 06108

Date: December 15, 1989

SAMPLE DATA:

Collected By: IT Corp.
Jacques Hill

SAMPLE NO.	DESCRIPTION OF SAMPLE
289-26-2677	Rinsate sample collected and received 12/7/89 from Pratt & Whitney, East Hartford, Ct., for hazardous waste incinerator closure plan analysis. IT Sample No. J2195, Travel Blank, analyzed 12/8/89.

LABORATORY FINDINGS:

(Parts per billion, except as noted)

ANALYSIS FOR	SAMPLE NO.				
	289-26-2677				
Methylene Chloride	ND				
1,1-Dichloroethene	ND				
1,1,1-Trichloroethane	ND				
Carbon Tetrachloride	ND				
Trichloroethene	ND				
Tetrachloroethene	ND				
	ND \leq 1 ppb				

CB - The results of the analysis have been corrected for the presence of the compound in the blank.

Lawton S. Averill
The Averill Environmental Laboratory, Inc.

AVERILL ENVIRONMENTAL LABORATORY INC

Lawton S. Averill, Director

100 Northwest Drive
Plainville, CT 06062
(203) 747-0676
FAX (203) 747-9264

CT Public Health Lab No. PH-0513

REPORT ON LABORATORY EXAMINATIONS

To Client: Pratt & Whitney
East Hartford, CT 06108

Date: December 15, 1989

SAMPLE DATA:

Collected By: Jacques Hill, IT Corporation

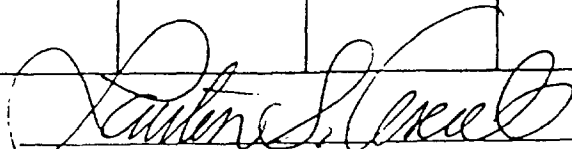
SAMPLE NO.	DESCRIPTION OF SAMPLE
289-26-2684	Wipe samples collected and received 12/7/89 from Pratt & Whitney, East Hartford, CT, for hazardous waste incinerator closure plan analysis.
289-26-2685	IT Sample No. J2203, CW-4
289-26-2686	IT Sample No. J2204, CW-3
289-26-2687	IT Sample No. J2205, CW-1
289-26-2688	IT Sample No. J2206, CW-2
289-26-2688	IT Sample No. J2207, Field Blank

LABORATORY FINDINGS:

Results are in ug/wipe area

ANALYSIS FOR	SAMPLE NO.				
	289-26-2684	289-26-2685	289-26-2686	289-26-2687	289-26-2688
Arsenic	11	12	11	10	9.5
Barium	ALL	OVER	RANGE;	> 14,000	
Cadmium	6.5	7.5	8.0	8.0	9.0
Chromium, Total	3.0	4.0	4.0	4.0	5.0
Copper	< 2.5	< 2.5	< 2.5	< 2.5	< 2.5
Lead	14	14	19	13	26
Mercury	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
Nickel	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0
Selenium	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50
Silver	< 2.5	< 2.5	< 2.5	< 2.5	< 2.5
Cyanide, Total	< 0.25	< 0.25	< 0.25	< 0.25	< 0.25

cc: Pratt & Whitney
Att: Scott Singer


The Averill Environmental Laboratory, Inc

AVERILL **ENVIRONMENTAL LABORATORY INC** 100 Northwest Drive Plainville, CT 06062 (203) 747-0676 FAX (203) 747-9264

Lawton S. Averill, Director

CT Public Health Lab No. PH-0513

REPORT ON LABORATORY EXAMINATIONS

To Client: Pratt & Whitney
East Hartford, CT 06108

Date: December 15, 1989

SAMPLE DATA:

Collected By: Jacques Hill, IT Corporation

SAMPLE NO.	DESCRIPTION OF SAMPLE
289-26-2684	Wipe samples collected and received 12/7/89 from Pratt & Whitney, East Hartford, Ct, for hazardous waste incinerator closure plan analysis. IT Sample #J-2203, CW-4 IT Sample #J-2204, CW-3 IT Sample #J-2205, CW-1 IT Sample #J-2206, CW-2 IT Sample #J-2207, Field Blank
289-26-2685	
289-26-2686	
289-26-2687	
289-26-2688	

LABORATORY FINDINGS:

Results are in ug per Wipe Area

ANALYSIS FOR	SAMPLE NO.				
	289-26-2684	289-26-2685	289-26-2686	289-26-2687	289-26-2688
Methylene Chloride	ND	ND	ND	ND	0.49
1,1-Dichloroethene	ND	ND	ND	0.14	ND
1,1,1-Trichloroethane	0.13	0.76	0.57	0.53	0.66
Carbon Tetrachloride	ND	ND	ND	ND	ND
Trichloroethene	ND	ND 0.005	ND	ND	ND
Tetrachloroethene	0.40	0.96	0.29	0.55	0.21
ND < 0.05					

cc: Pratt & Whitney
Att: Scott Singer



AVERILL ENVIRONMENTAL LABORATORY INC

Lawton S. Averill, Director

100 Northwest Drive
Plainville, CT 06062
(203) 747-0676
FAX (203) 747-9264

CT Public Health Lab No. PH-0513

REPORT ON LABORATORY EXAMINATIONS

To Client: Pratt & Whitney
East Hartford, CT 06108

Date: December 15, 1989

SAMPLE DATA:

Collected By: Jacques Hill, IT Corporation

SAMPLE NO.	DESCRIPTION OF SAMPLE
289-26-2689	Wipe samples collected and received 12/7/89 from Pratt & Whitney, East Hartford, Ct, for hazardous waste incinerator closure plan analysis.
289-26-2690	IT Sample No. J2208, CW-5
	IT Sample No. J2209, CW-6

LABORATORY FINDINGS:

Results are in ug/wipe area

ANALYSIS FOR	SAMPLE NO.				
	289-26-2689	289-26-2690			
Arsenic	9.5	9.5			
Barium	ALL OVER RANGE; > 14,000				
Cadmium	7.5	8.0			
Chromium, Total	4.5	3.5			
Copper	< 2.5	< 2.5			
Lead	10	11			
Mercury	< 0.05	< 0.05			
Nickel	< 5.0	< 5.0			
Selenium	< 0.50	< 0.50			
Silver	< 2.5	< 2.5			
Cyanide, Total	< 0.25	< 0.25			

cc: Pratt & Whitney
Att: Scott Singer

The Averill Environmental Laboratory, Inc.

AVERILL **ENVIRONMENTAL LABORATORY INC** 100 Northwest Drive Plainville, CT 06062 (203) 747-0676 FAX (203) 747-9264

Lawton S. Averill, Director

CT Public Health Lab No. PH-0513

REPORT ON LABORATORY EXAMINATIONS

To Client: Pratt & Whitney
East Hartford, CT 06108

Date: December 18, 1989

SAMPLE DATA:

Collected By: Jacques Hill, IT Corp.

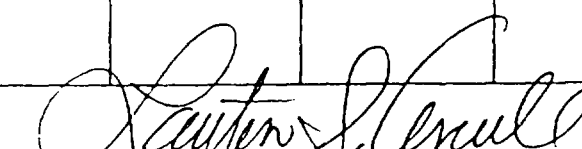
SAMPLE NO.	DESCRIPTION OF SAMPLE
	Concrete chip samples collected and received 12-7-89 from Pratt & Whitney, East Hartford, CT for hazardous waste incinerator closure plan analysis.
289-26-2678	IT Sample No. J 2196, CS-1
289-26-2679	IT Sample No. J 2197, CS-2
289-26-2680	IT Sample No. J 2198, CS-3
289-26-2681	IT Sample No. J 2199, CS-4
289-26-2682	IT Sample No. J 2200, CS-5

LABORATORY FINDINGS:

(milligrams per liter, mg/l, except as noted)

ANALYSIS FOR	SAMPLE NO.				
	289-26-2678	289-26-2689	289-26-2680	289-26-2681	289-26-2682
pH, 10% Slurry	10.6	11.2	10.9	10.8	11.7
Total Solids, percent	98.6	98.1	98.0	98.3	97.0
Tests are mg/kg, (ppm), based on Dry Weight					
Arsenic	5.5	6.7	7.5	6.0	7.3
Barium	47	23	40	5.0	45
Cadmium	4.7	≤ 1.3	≤ 1.5	≤ 1.3	≤ 1.5
Chromium, Total	15	9.3	49	3.4	640
Chromium, Hexavalent	≤ 0.059	0.065	0.23	0.13	0.033
Copper	9.9	13	30	9.7	74
Lead	≤ 2.1	≤ 2.1	3.0	≤ 2.1	9.8
Mercury	0.043	0.042	0.049	0.042	0.049
Nickel	19	8.9	54	≤ 4.2	400
Selenium	≤ 0.47	≤ 0.45	≤ 0.47	≤ 0.51	≤ 0.41
Silver	≤ 2.2	≤ 2.2	≤ 2.0	≤ 2.3	3.4
Cyanide, Total	≤ 0.48	≤ 0.49	≤ 0.48	≤ 0.51	≤ 0.49
Cyanide, Amenable	-	-	-	-	-

cc: Pratt & Whitney
Att: Scott Singer



AVERILL ENVIRONMENTAL LABORATORY INC

100 Northwest Drive
Plainville, CT 06062
(203) 747-0676
FAX (203) 747-9264

Lawton S. Averill, Director

CT Public Health Lab No. PH-0513

REPORT ON LABORATORY EXAMINATIONS

To Client: Pratt & Whitney
East Hartford, Ct. 06108

Date: December 15, 1989

SAMPLE DATA:

Collected By:

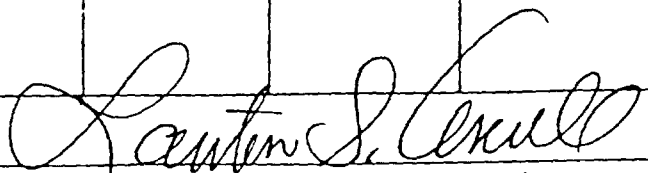
SAMPLE NO.	DESCRIPTION OF SAMPLE
	Concrete sample collected and received 12/7/89 from Pratt & Whitney, East Hartford, Ct., for hazardous waste incinerator closure plan analysis.
289-26-2678	IT Sample #CS-1
289-26-2679	IT Sample #CS-2
289-26-2680	IT Sample #CS-3
289-26-2681	IT Sample #CS-4
289-26-2682	IT Sample #CS-5
	DATE ANALYZED: 12/12/89

LABORATORY FINDINGS:

Parts per billion, ppb
ND \angle 2.5 ppb

ANALYSIS FOR	SAMPLE NO.				
	289-26-2678	289-26-2679	289-26-2680	289-26-2681	289-26-2682
Methylene Chloride	5.4	7.4	1.8	4.7	8.8
1,1-Dichloroethene	2.1	4.8	6.4	6.8	ND
1,1,1-Trichloroethane	22	96	130	31	ND
Carbon Tetrachloride	ND	ND	ND	ND	ND
Trichloroethene	2.1	ND	ND	ND	ND
Tetrachloroethene	280	460	530	310	17

cc: Pratt & Whitney
Attn: Scott Singer


The Averill Environmental Laboratory, Inc.

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CT Public Health Lab No. PH-0513

REPORT ON LABORATORY EXAMINATIONS

To Client: Pratt & Whitney
East Hartford, Ct. 06108

Date: December 15, 1989

SAMPLE DATA:

Collected By: IT Corp.
Jacques Hill

SAMPLE NO.	DESCRIPTION OF SAMPLE
	Concrete chip samples collected and received 12/7/89 from Pratt & Whitney, East Hartford, Ct., for hazardous waste incinerator closure plan analysis.
289-26-2678E	IT Sample No. J2196, CS-1 *EP Toxicity Elutriation
289-26-2679E	IT Sample No. J2197, CS-2 *EP Toxicity Elutriation
289-26-2680E	IT Sample No. J2198, CS-3 *EP Toxicity Elutriation
289-26-2681E	IT Sample No. J2199, CS-4 *EP Toxicity Elutriation
289-26-2682E	IT Sample No. J2200, CS-5 *EP Toxicity Elutriation

LABORATORY FINDINGS:

(milligrams per liter, mg/l, except as noted)

ANALYSIS FOR	SAMPLE NO.				
	289-26-2678E	289-26-2679E	289-26-2680E	289-26-2681E	289-26-2682E
ml. 0.5N acetic acid	400	400	400	400	400
pH of filtrate	4.8	4.8	4.8	4.8	4.8
Tests are mg/l in filtrate					
Arsenic	∠ 0.01	∠ 0.01	∠ 0.01	∠ 0.01	∠ 0.01
Barium	0.30	0.16	0.26	0.22	0.31
Cadmium	∠ 0.03	∠ 0.03	0.04	∠ 0.03	∠ 0.03
Chromium, Total	0.06	0.06	0.07	0.06	∠ 0.05
Lead	∠ 0.05	∠ 0.05	∠ 0.05	∠ 0.05	∠ 0.05
Mercury	∠ 0.001	∠ 0.001	∠ 0.001	∠ 0.001	∠ 0.001
Selenium	∠ 0.01	∠ 0.01	∠ 0.01	∠ 0.01	∠ 0.01
Silver	∠ 0.05	∠ 0.05	∠ 0.05	∠ 0.05	∠ 0.05
*EP Toxicity Elutriation: 100 grams of sample mixed with the designated amount of 0.5N acetic acid, diluted to 2000 ml. with distilled water, mixed for 24 hours, settled and filtered through 0.45 micron filter paper. Filtrate was tested.					

cc: Pratt & Whitney
Attn: Scott Singer

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Lawton S. Averill, Director

CT Public Health Lab No. PH-0513

REPORT ON LABORATORY EXAMINATIONS

To Client: Pratt & Whitney
East Hartford, CT 06108

Date: December 18, 1989

SAMPLE DATA:

Collected By: Jacques Hill, IT Corp.

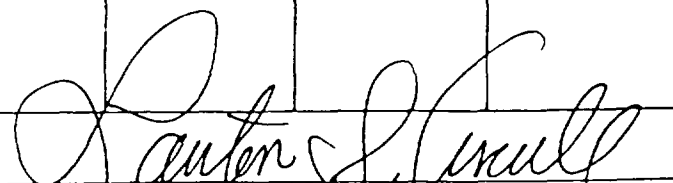
SAMPLE NO.	DESCRIPTION OF SAMPLE
289-26-2683	Concrete chip samples collected and received 12-7-89 from Pratt & Whitney, East Hartford, CT for hazardous waste incinerator closure plan analysis. IT Sample No. J 2201, CS-6

LABORATORY FINDINGS:

(milligrams per liter, mg/l, except as noted)

ANALYSIS FOR	SAMPLE NO.				
	289-26-2683				
pH, 10% Slurry	11.1				
Total Solids, percent	99.1				
Tests are mg/kg, (ppm), based on Dry Weight					
Arsenic	8.6				
Barium	19				
Cadmium	< 1.5				
Chromium, Total	3.4				
Chromium, Hexavalent	0.12				
Copper	10				
Lead	4.4				
Mercury	< 0.049				
Nickel	< 4.9				
Selenium	< 0.49				
Silver	< 2.4				
Cyanide, Total	< 0.50				
Cyanide, Amenable	-				

cc: Pratt & Whitney
Att: Scott Singer


The Averill Environmental Laboratory, Inc.

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CT Public Health Lab No. PH-0513

REPORT ON LABORATORY EXAMINATIONS

To Client: Pratt & Whitney
East Hartford, Ct. 06108

Date: December 15, 1989

SAMPLE DATA:

Collected By:

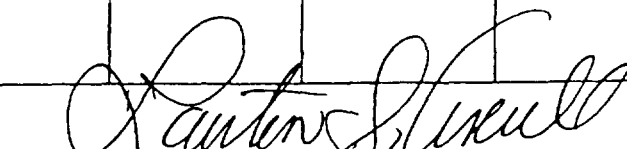
SAMPLE NO.	DESCRIPTION OF SAMPLE
289-26-2683	Concrete sample collected and received 12/7/89 from Pratt & Whitney, East Hartford, Ct., for hazardous waste incinerator closure plan analysis. IT Sample #CS-6
	DATE ANALYZED: 12/12/89

LABORATORY FINDINGS:

parts per billion, ppb
ND \leq 2.5 ppb

ANALYSIS FOR	SAMPLE NO.				
	289-26-2683				
Methylene Chloride	5.2				
1,1-Dichloroethene	ND				
1,1,1-Trichloroethane	18				
Carbon Tetrachloride	ND				
Trichloroethene	ND				
Tetrachloroethene	300				

cc: Pratt & Whitney
Attn: Scott Singer



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CT Public Health Lab No. PH-0513

REPORT ON LABORATORY EXAMINATIONS

To Client: Pratt & Whitney
East Hartford, Ct. 06108

Date: December 15, 1989

SAMPLE DATA:

Collected By: IT Corp.
Jacques Hill

SAMPLE NO.	DESCRIPTION OF SAMPLE
289-26-2683 (E)	Concrete chip sample collected and received 12/7/89 from Pratt & Whitney, East Hartford, Ct. for hazardous waste incinerator closure plan analysis. IT Sample No. J2201, CS-6 *EP Toxicity Elutriation

LABORATORY FINDINGS:

(milligrams per liter, mg/l, except as noted)

ANALYSIS FOR	SAMPLE NO.			
	289-26-2683E			
ml. 0.5N acetic acid	400			
pH of filtrate	4.8			
<u>Tests are mg/l in filtrate</u>				
Arsenic	< 0.01			
Barium	0.21			
Cadmium	< 0.03			
Chromium, total	0.05			
Lead	< 0.05			
Mercury	< 0.001			
Selenium	< 0.01			
Silver	< 0.05			
*EP Toxicity Elutriation: 100 grams of sample mixed with the designated amount of 0.5N acetic acid, diluted to 2000 ml. with distilled water, mixed for 24 hours, settled, and filtered through 0.45 micron filter paper. Filtrate was tested.				

cc: Pratt & Whitney
Attn: Scott Singer

Lawton S. Averill
The Averill Environmental Laboratory, Inc.

APPENDIX N

Validation Report

**QA/QC REVIEW OF AVERILL ENVIRONMENTAL LABORATORY
DATA FOR WASTE FEED LINE RESULTS (ROUND II)**

METALS

Holding Times: Samples were prepared and analyzed within 40 CFR 136 holding times.

Initial and Continuing Calibration Verification: Arsenic (82%) had a percent recovery outside control limits (90-110%). Arsenic results should be considered estimates.

Blanks: Calibration and preparation blanks contained traces of chromium (0.01 mg/L), copper (0.003 mg/L), lead (0.02 mg/L) and zinc (0.003 mg/L). Results for these metals less than five times the blank level should not be reported.

Duplicates: All duplicate analyses were within control limits.

Spike Sample Recovery: All percent recoveries were within control limits.

VOLATILES BY 8010

Holding Times: Samples were analyzed within 40 CFR 136 holding times.

Initial Calibration: All percent relative standard deviation (% RSD's) were within control limits (less than 20%).

Continuing Calibration: All percent differences (% D's) were within control limits (less than 15%).

Blanks: The trip blank (travel blank) reported all target compounds as non-detected. Method blanks Run #800 (4.7 µg/L) and Run #808 (0.51 µg/L) contained 1,1,1-trichloroethane. No results less than five times the blank level should be reported in associated samples.

Surrogate Recoveries: Percent recoveries were within control limits established by Method 8010, SW-846.

Matrix Spike and Duplicate: Relative percent differences and percent recoveries were all within control limits.

**QA/QC REVIEW OF AVERILL ENVIRONMENTAL
LABORATORY DATA FOR CEILING WIPE SAMPLE RESULTS**

METALS

Holding Times: All samples were prepared and analyzed within the required holding times.

Initial and Continuing Calibration Verification: Arsenic (82%) had a percent recovery outside control limits. Results for arsenic should be considered estimates.

Blanks: Calibration and preparation blanks contained traces of chromium (0.01 mg/L), copper (0.003 mg/L), lead (0.02 mg/L), and zinc (0.003 mg/L). The field blank contained traces of arsenic (9.5 µg/100 cm²). The filter blank contained traces of cadmium (3.5 µg/100 cm²), lead (10 µg/100 cm²), and arsenic (9.2 µg/100 cm²). Results for chromium (25 µg/100 cm²), arsenic (47.5 µg/100 cm²), cadmium (45 µg/100 cm²), and lead (130 µg/100 cm²), below these levels, should be rejected. Also, all results for barium should be rejected.

VOLATILES BY 8010

Holding Times: All samples were analyzed within the required holding times.

Initial Calibration: All percent relative standard deviations (% RSD's) were within control limits (less than 20%).

Continuing Calibration: 1,1,1-Trichloroethane (12/12/89--day sample), methylene chloride (12/12/89--night sample), and 1,1,1-trichloroethane (12/13/89--day sample) each had percent differences greater than 15%. Results for these compounds in associated samples should be considered estimates.

Blanks: The field blank contained traces of methylene chloride (0.49 µg/100 cm²), 1,1,1-trichloroethane (0.66 µg/100 cm²), and tetrachloroethene (0.21 µg/100 cm²). The wipe blanks reported all target compounds as non-detect. Results for methylene chloride (4.9 µg/100 cm²), 1,1,1-trichloroethane (3.3 µg/100 cm²), and tetrachloroethene (1.05 µg/100 cm²), below these levels, should be rejected.

Surrogate Recoveries: Samples CW-4 and CW-5 had one of three percent recoveries outside control limits. No action will be taken for just one out.

Matrix Spike and Duplicate: All percent recoveries were within control limits. Two out of six relative percent differences were outside control limits. No action is taken.

**QA/QC REVIEW OF AVERILL ENVIRONMENTAL LABORATORY
DATA FOR CONCRETE CHIP SAMPLE RESULTS**

METALS

Holding Times: Samples were analyzed and prepared within appropriate holding times.

Initial and Continuing Calibration Verification: Arsenic (82%) had a percent recovery outside control limits. Arsenic results should be considered estimates.

Blanks: The lab blank and method blank reported all target compounds as non-detect. Calibration and preparation blanks contained traces of chromium (0.01 mg/L), copper (0.003 mg/L), lead (0.02 mg/L) and zinc (0.003 mg/L). Results less than five times the blank level should not be reported in associated samples.

Duplicates: Chromium (39%) for total metal analyses had a relative percent deviation (RPD) outside control limits (0-35%). Results for chromium in total metals analyses should be considered estimates.

Spike Sample Recovery: No spike samples were analyzed.

VOLATILES BY 8010

Holding Times: Samples were analyzed within the appropriate holding times.

Initial Calibration: All percent relative standard deviations (% RSD's) were within control limits (less than 20%).

Continuing Calibration: All percent differences (% D's) were within control limits (less than 15%).

Blank: The method blank reported all target compounds as non-detected.

Surrogate Recoveries: IT sample numbers CS-1 and CS-4 had one of three surrogate recoveries outside control limits. No action will be taken on one of three surrogates outside control limits.

Matrix Spike and Duplicate: One of three percent recoveries and one of six relative percent differences were outside control limits. This data in conjunction with surrogate data, indicate a matrix interference, but is not critical in higher concentrations of analyte.